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April 1992

PROPOSED OUTER CONTINENTAL SHELF NATURAL GAS AND OIL RESOURCE MANAGEMENT COMPREHENSIVE PROGRAM FOR 1992-1997 ENVIRONMENTAL IMPACT STATEMENT

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A Glossary

A. Glossary

abandoned well - a well that has had its wellbore secured and is no longer in use either because it was a dry hole, has ceased to produce, or cannot be operated economically. A well may be temporarily or permanently abandoned.

anadromous fish - fish that migrate up river from the sea to breed in fresh water.

anomaly - deviation from normal conditions.

anthropogenic - coming from human sources, relating to the effect of man on nature.

aphotic zone - Zone where the levels of light entering through the surface are not sufficient for photosynthesis or for animal response.

area of hydrocarbon potential - that part of an offshore planning area which has the primary geologic characteristics favorable for the generation of accumulation of hydrocarbons.

aromatic - applied to a class of organic compounds containing benzene rings or benzenoid structures.

attainment area - An area which is shown by monitored data or which is calculated by air quality modeling not to exceed any primary or secondary ambient air quality standards established by the USEPA.

barrel - equal to 42 U.S. gallons.

base case - An estimate of the resources estimated to be leased, developed, and produced, assuming that hydrocarbons exist in the area (i.e., a conditional estimate), and an estimate of the exploration, development, production, and transportation activities appropriate to that level of resources.

benthic - bottom dwelling, associated with (in or on) the seafloor.

benthic macroinvertebrate - animals such as worms, clams, or crabs which are large enough to see without the aid of a microscope.

benthos - organisms which dwell in or on the seafloor, the organisms living in or associated with the benthic (or bottom) environment.

bid - an offer for an OCS lease submitted by a potential lessee in the form of a cash bonus dollar amount or other commitments, as specified in the Final Notice of Sale.

biological opinion - an appraisal from either FWS or NMFS evaluating the impact of a proposed Federal action, if it is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat, as required by Section 7 of the Endangered Species Act.

bivalves - general term for two-shelled mollusks (clams, oysters, scallops, mussels).

block - a geographical area, as portrayed on an official MMS protraction diagram or leasing map, that contains approximately nine square miles (2,304 hectares or 5,760 acres). Each block has a specific identification number, area, longitude and latitude coordinates that can be pinpointed on an Official Protraction Diagram. (see tract).

blowout - refers to an uncontrolled flow of fluids from a wellhead or wellbore. Unless otherwise specified, a flow of fluids from a flowline is not considered a blowout as long as the wellhead control valves can be automatically or manually activated. If the wellhead control valves become inoperative, the flow is classified as a blowout. A blowout can also occur below the seabed, from one formation to another.

carnivores - flesh eating animals.

carrying capacity - the maximum number or weight of individuals that can exist in a given habitat; an appraisal from either FWS or NMFS evaluating the impact of a proposed activity on endangered and threatened species.

casing - steel pipe placed in an oil or gas well (borehole) as drilling progresses to prevent the wall of the hole from caving in during drilling and to provide a means of extracting petroleum if the well is productive and to control the flow of gas and fluids within the hole.

cetacean - any of an order (Cetacea) of aquatic mostly marine mammals including the whales, dolphins, porpoises and related forms with large head, fusiform nearly hairless body, and paddle-shaped forelimbs, vestigial concealed hind limbs, and horizontal flukes (tails).

circulation - the movement of drilling fluid (mud) downward through the drill pipe and the upward return through the annulus.

coastal waters - those waters surrounding the continent which exert a measurable influence on uses of the land.

coastal wetlands - include forested and nonforested habitats, mangroves, and all marsh islands which are exposed to coastal waters. Included in forested wetlands are hardwood hammocks, cypress-tupelogum swamps, and fluvial vegetation/bottomland hardwoods. Nonforested wetlands include fresh, brackish, and salt marshes. These areas directly contribute to the high biological productivity of coastal water by input of detritus and nutrients, by providing nursery and feeding areas for shellfish and finfish, by serving as habitat for many birds and other animals, and by providing waterfowl hunting and fur trapping.

coastal zone - the coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder), strongly influenced by each other and in proximity to the shorelines of the several coastal States, and includes islands, transitional and intertidal areas, salt marshes, wetlands, and beaches. The zone extends seaward to the outer limit of the United States territorial sea. The zone extends inland from the shorelines only the extent necessary to control shorelands, the uses of which have a direct and significant impact on the coastal waters. Excluded from the coastal zone are lands the use of which is by law subject to the discretion of or which is held in trust by the Federal government, its officers, or agents. (The State land and water area officially designated by the State as "coastal zone" in its State coastal zone program as approved by the Department of Commerce under the CZMA).

coastal zone consistency review - State review of Federal projects requiring licenses or permits and OCS plans pursuant to the CZM Act by affected coastal States to determine if the action is consistent with the State approved CZM program. (This review can take up to 6 months to complete).

Coastal Zone Management Act - the legislation which allowed the creation of coastal authorities in coastal States, administered by NOAA in the Department of Commerce.

conditional probabilities - the estimated probability of an oil spill contacting an area of concern, given that a spill occurs at a specific location (launch area); an output of the OSRA model.

conditional resources - assessment of oil or gas resources under the assumption that economically recoverable resources exist within the area of interest.

continental shelf - a broad, gently sloping, shallow feature extending from the shore to the continental slope, generally considered to exist to the depth of 200m; that part of continental margin between continental shelf and continental rise (or oceanic trench).

continental slope - a relatively steep, narrow feature paralleling the continental shelf; the region in which the steepest descent to the ocean bottom occurs.

contingency plan - a plan for possible offshore emergencies prepared and submitted by the oil or gas operator as part of the Plan of Development and Production, and may be required for part of the Plan of Exploration.

critical habitat - a designated area that is essential to the conservation of an endangered or threatened species.

critical operation and curtailment plan - a critical operation and curtailment plan (COCP) is submitted with the EP to identify safety procedures that will be followed during drilling operations that are more critical in respect to well control and the prevention of fire, explosion, oil spills, and other discharges. Examples of when the COCP will be implemented include; drill stem testing, running casing, cutting and removing casing, logging or wireline operations, well completion operations, and during meteorological or oceanographic conditions which approach the operating limitation of the drilling unit.

crude oil - a mixture of liquid hydrocarbons that exists in natural underground reservoirs as distinguished from refined oils manufactured from it.

crustaceans - any aquatic invertebrate with jointed legs, such as crabs, shrimp, lobster, barnacles, amphipods, isopods, etc.; primarily an aquatic group.

deep stratigraphic test well (DST) - a well drilled by a group of private companies on unleased land to examine the geology of an area considered for leasing, ie. COST WELL; a well drilled by a group of private companies on unleased land under a Federal G&G permit (under 30 CFR 251 regs); a well that penetrates into the seabottom more than 50 feet into consolidated rock or more than
300 feet T.D. to examine the geology of an area considered for leasing, ie. COST WELL.

delineation well - an exploratory well drilled to define the areal extent of a field. Also referred to as an "expendable well."

development - activities that take place following discovery of minerals in paying quantities, including geophysical activity, drilling, platform construction, and operation of all onshore support facilities, and that are for the purpose of ultimately producing the minerals discovered.

development and production plan (DPP) - a plan describing the specific work to be performed on an offshore lease, including all development and production activities that the lessee proposes to undertake during the time period covered by the plan and all actions to be undertaken up to and including the commencement of sustained production. The plan also includes descriptions of facilities and operations to be used, well locations, current geological and geophysical information, environmental safeguards, safety standards and features, time schedules, and other relevant information. All lease operators are required to formulate and obtain approval of such plans by MMS before (approval of) development and production activities may begin (can be given); requirements for submittal of DPP are wholly identified in 30 CFR 250.34.

development tract - a tract located on a geologic structure in common with a leased tract, in which the leased tract has proven hydrocarbons. (See "Drainage Tract").

development well - a well drilled into a known producing formation in a previously discovered field, to be distinguished from a wildcat, exploratory well, or an offset well.

dilution - the reduction in the concentration of dissolved or suspended substances by mixing with water.

discharge - something that is emitted; flow rate of a fluid at a given instant expressed as volume per unit of time.

discovery - the initial find of significant quantities of fluid hydrocarbons of a field.

dispersion - a distribution of finely divided particles in a medium.

drainage tract - a tract sharing a common reservoir with a leased tract containing hydrocarbons. (see "development tract").

drillship - a self-propelled, self-contained vessel equipped with a derrick amidship for drilling wells in deepwater.

drilling mud - a special mixture of clay, water, or refined oil, and chemical additives pumped downhole through the drill pipe and drill bit. The mud cools the rapidly rotating bit, lubricates the drill pipe as it turns in the wellbore, carries rock cuttings to the surface, serves to keep the hole from crumbling or collapsing, and provides the weight or hydrostatic head to prevent extraneous fluids from entering the wellbore and to control downhole pressures that may be encountered (drilling fluid).

dwt - Dead weight tonnage.

economically recoverable resource estimate - an assessment of hydrocarbon potential (at the area of the prospect) that takes into account the physical and technological constraints on production and the influence of costs of exploration and development and market price on industry investment in OCS exploration, development, and production.

effect - a measurable alteration or change in environmental conditions.

effluent - the liquid waste of sewage and industrial processing.

emission offset - Emission reductions obtained from facilities, either onshore or offshore, other than the facility or facilities covered by the proposed Exploration Plan or Development and Production Plan.

endangered and threatened species (endangered species) - those species identified in 43 FR 238 (December 11, 1978) and subsequent publications. This refers to any species which is in danger of extinction throughout all or a significant portion of its range and has been officially listed by the appropriate Federal or State agency; a species is determined to be endangered (or threatened) because of any of the following factors: (a) the present or threatened destruction, modification, or curtailment of its habitat or range; (b) over utilization for commercial, sporting, scientific, or educational purposes; (c) disease or predation; (d) the inadequacy of existing regulatory mechanisms; or (e) other natural or man-made factors affecting its continued existence.

environmental assessment - a concise public document required by NEPA. In the document, a Federal agency proposing (or reviewing) an action provides evidence and analysis for determining whether it must prepare an EIS or whether it finds there is no significant impact i.e., FONSI.

environmental effect - a measurable alteration or change in environmental conditions.

Environmental Impact Statement - a statement required by the National Environmental Policy Act of 1969 (NEPA) or similar State law in relation to any major action significantly affecting the environment; a NEPA document.

ESA Section 7 - the part of the ESA that requires that any action conducted, authorized, or funded by a Federal agency is not likely to jeopardize the continued existence of a listed endangered or threatened species or adversely modify its critical habitat.

estuary - semi-enclosed coastal body of water which has a free connection with the open sea and within which seawater is measurably diluted with freshwater; semi-enclosed coastal body of water which has a free connection with the open sea and within which seawater is often measurably diluted with freshwater.

euphausiids - small shrimp-like animals usually pelagic animals frequently used as a food source of marine mammals.

exclusive economic zone - the maritime region adjacent to the territorial sea, extending 200 nautical miles from the baseline of the territorial sea, in which the United States has exclusive rights and jurisdiction over living and nonliving natural resources. (see "EEZ").

expected impact - those alterations or changes to environmental conditions estimated to be probable or likely to occur as a result of a proposed action.

exploration - the process of searching for minerals. Exploration activities include: (1) geophysical surveys where magnetic, gravity, seismic, or other systems are used to detect or infer the presence of such minerals and; (2) any drilling, except development drilling, whether on or off known geological structures. Exploration also includes the drilling of a well in which a discovery of oil or natural gas in paying quantities is made and the drilling, after such a discovery, of any additional well that is needed to delineate a reservoir and to enable the lessee to determine whether to proceed with development and production.

exploration plan (EP) - a plan submitted by a lessee (30 CFR 250.33) that identifies all the potential hydrocarbon accumulations and wells that the lessee proposes to drill to evaluate the accumulations within the lease or unit area covered by the plan. All lease operators are required to obtain approval of such a plan by a Regional Supervisor before exploration activities may commence; a plan required to be submitted by a lessee (30 CFR 250.33) that identifies all the potential hydrocarbon accumulations and wells that the lessee proposes to drill to evaluate the accumulations within the lease or unit area covered by the plan. All lease operators are required to obtain approval of such a plan by a Regional Supervisor before exploration activities can be approved.

exploratory well - a well drilled in unproven or semi-proven territory for the purpose of ascertaining the presence underground of a commercially producible deposit of petroleum or natural gas.

fair market value - defined as the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desires but is not obligated to buy.

fault - a fracture in the earth's crust accompanied by a displacement of one side of the fracture with respect to the other.

fauna - the animals of a particular region or time.

fixed or bottom founded - permanently or temporarily attached to the seafloor.

flyway - an established air route of migratory birds.

formation - a bed or deposit sufficiently homogeneous to be distinctive as a unit. Each different formation is given a name, frequently as a result of the study of the formation outcrop at the surface and sometimes based on fossils found in the formation.

fugitive emissions - Emission into the atmosphere which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening.

gathering lines - pipelines used to bring oil or gas from production leases by separate lines to a central point, that is, a tank farm or a trunk pipeline.

geologic data - facts, statistics, or samples which have not been analyzed or processed, pertaining to coring, drilling, well logging, or bottom sampling.

geologic hazard - a feature or condition that, if unmitigated, may seriously jeopardize offshore oil and gas exploration and development activities. Mitigation may necessitate special engineering procedures or relocation of a well.

geology report - a report prepared for each lease sale providing information on the general geology, resource potential, environmental geology and geologic hazards of a planning area.

geophysical - of or relating to the physics of the earth, especially the measurement and interpretation of geophysical properties of the rocks in an area.

geophysical data - facts, statistics, or samples which have not been analyzed or processed, pertaining to gravity, magnetic, seismic, or other surveys/systems.

geophysical survey - The exploration of an area during which geophysical properties and relationships unique to the area are measured by one or more geophysical methods.

habitat - a specific type of place that is occupied by an organism, a population, or a community; a specific type of place defined by its physical or biological environment that is occupied by an organism, a population, or a community.

haul-out area - specific locations where pinnipeds come ashore and concentrate in numbers to rest, breed, and/or bear young.

herbivores - animals whose diet consists of plant material.

high case - An estimate of a significantly higher level of resource recovery and attendant exploration and development activity which could result from leasing more acreage than may occur in the Base Case or which could result from the discoveries of larger oil and gas accumulations than estimated under the Base Case assumptions.

H_2S - hydrogen sulfide.

hydrocarbon - any of a large class of organic compounds containing primarily carbon and hydrogen, comprising paraffins, olefins, members of the acetylene series, alicyclic hydrocarbons, and aromatic hydrocarbons, and occurring in many cases in petroleum, natural gas, coal, and bitumens.

hypothermia - subnormal temperature of the body, usually due to excessive heat loss.

impact - a measurable alteration or change in environmental conditions.

incidental take - Takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant.

indirect effects - caused by activities which are stimulated by an action but not directly related to it.

industry infrastructure - the facilities associated with oil and gas development, e.g., refineries, gas processing plants, etc.

information to lessees - information included in the Notice of Sale to alert lessees and operators of special concerns in or near a sale area of regulatory provisions enforceable by Federal or State agencies.

injection - the process of forcing fluid (including gas) into a formation to increase the flow of oil or gas or to maintain reservoir pressure.

jacket - a supporting structure for an offshore platform consisting of large diameter pipe welded together with pipe braces to form a multilegged stool-like structure. The jacket is secured to the ocean floor by pilings driven through the legs. (see “steel-jacketed platform”).

jack-up rig - a barge-like, floating platform with legs at each corner that can be lowered to the seabottom to raise the platform above the water; a drilling platform with retractable legs that can be lowered to the seabottom to raise the platform above the water.

landfall - the site at which a marine pipeline comes to shore.

land use - the function for which people employ an area of land.

lay barge - a shallow-draft, barge-like vessel used in the construction and laying of underwater pipelines.

lease - any form of authorization which is issued under Section 8 or maintained under Section 6 of the Outer Continental Shelf Lands Act and which authorizes exploration for, and development and production of, minerals of a specified time of a given area.

lease sale - an MMS proceeding by which leases for certain OCS blocks/are offered for sale by competitive sealed bidding and during which bids are received, announced, and recorded.

lessee - a person or persons to whom a lease is awarded; the recipient of a lease; a recognized entity to whom a lease is awarded; the recipient of a lease.

lighter - a barge or small tanker used to move cargo from a large ship to port; also, to transport by lighter.

macroinvertebrate - animals such as worms, clams, or crabs which are large enough to be seen without the aid of a microscope.

mariculture - the breeding or growth of marine animals and plants to increase their stocks.

marine sanctuary - area protected under the Marine Protection, Research and Sanctuaries Act of 1972.

marshes - persistent emergent nonforested wetlands characterized by vegetation consisting predominantly of cordgrasses, rushes, and cattails.

microcrustacean - any relatively small crustacean (may range from microscopic to slightly over one centimeter in size) including organisms such as beach hoppers (amphipods), copepods, ostracods, isopods, and mysids.

military warning area - an area established within which the public is warned that military activities take place.

mollusks - animal phylum characterized by soft body parts including clams, mussels, snails, squid, and octopus.

mud - the liquid circulated through the wellbore during rotary drilling operations. In addition to its function of bringing cuttings to the surface, drilling mud cools and lubricates the bit and drill stem, protects against blowouts by holding back subsurface pressures and deposits a mud cake on the wall of the borehole to prevent loss of fluids to the formations, also called drilling mud or drilling fluid; also a sediment designation composed of silt and clay sized particles.

mysids - small shrimp-like organisms, also known as opossum shrimp due to their method of egg incubation.

natural gas - hydrocarbons that are in a gaseous phase under atmospheric conditions of temperature and pressure.

nearshore waters - Offshore, open waters that extend from the shoreline out to the limit of the territorial seas (12 nautical miles).

nonattainment area - any area which is shown by monitored data or which is calculated by air quality standards established by the USEPA.

official protraction diagram - leasing map that designates a planning area by using the Universal Transverse Mercator Grid System and is divided into blocks. (see OPD).

offloading - another name for unloading; offloading refers more specifically to liquid cargo, crude oil, and refined products.

offshore marine recreational fishing - hook and line sport fishing from a boat seaward of the beach; for fun, food, or occasional incidental profit, inclusive of spearfishing.

offshore monobuoy - a buoy system at which a tanker may anchor, discharge, or load petroleum products.

oil spill contingency plan - a plan submitted by the lease or unit operator along with or prior to a submission of a plan of exploration or a development/production plan that details provisions for fully defined, specific actions to be taken following discovery and notification of an oil spill; a plan submitted by the designated lease operator or unit operator along with or prior to a submission of a plan of exploration or a development/production plan that details provisions for fully defined, specific actions to be taken following discovery and notification of an oil spill.

omnivores - animals whose diet consists of both plant and animal material.

operational discharge - a release of oil that is part of the routine operation of a function.

operator - the person or company engaged in the business of drilling for, producing, or processing oil, gas, or other minerals and recognized by the MMS as the official contact and responsible for the lease activities or operations.

organic matter - material derived from living plant or animal organisms.

Outer Continental Shelf (OCS) - all submerged lands that comprise the continental margin adjacent to the United States and seaward of State offshore lands.

permit - contract or agreement, other than a lease, approved for a specified period under which a person or persons acquire the right to conduct geologic or geophysical exploration, reconnaissance, or research.

petroleum - an oily, flammable bituminous liquid that occurs in many places in the upper strata of the earth, either in seepages or in reservoirs; essentially a complex mixture of hydrocarbons of different types with small amounts of other substances; any of various substances (as natural gas or shale oil) similar in composition to petroleum.

phytoplankton - plant (photosynthetic) plankton; microscopic, freefloating, photosynthetic organisms that drift passively in the water.

pinniped - any of a suborder (Pinnipedia) of aquatic carnivorous mammals (e.g., seals, sea lions, sea otters, walruses) with all four limbs modified into flippers; any of a suborder (Pinnipedia) of aquatic carnivorous mammals (e.g., seals, sea lions, walruses) with all four limbs modified into flippers.

plan of development and production (POD) - a plan describing the specific work to be performed, including all development and production activities that the lessee(s) proposes(s) to undertake during the time period covered by the plan and all actions to be undertaken up to and including the commencement of sustained production. The plan also includes descriptions of facilities and operations to be used, well locations, current geological and geophysical information, environmental safeguards, safety standards and features, time schedules, and other relevant information; under 30 CFR 250.34-2 all lease operators are required to formulate and obtain approval of such plans by the Regional Supervisor of the Minerals Management Service before development and production activities may commence.

plan of exploration (POE) - a plan based on available relevant information about a leased area that identified, to the maximum extent possible, the potential hydrocarbon accumulations and wells that the lessee(s) propose(s) to drill to evaluate the accumulation within the entire area of the lease(s) covered by the plan; under 30 CFR 250.341 lease operators are required to formulate and obtain approval of such plans by the Director of MMS before significant exploration activities may commence.

plankton - passively floating or weakly motile aquatic plants and animals.

planning area - a subdivision of an offshore area used as the initial basis for considering blocks to be offered for lease in the DOI's areawide offshore oil and gas leasing program.

platform - a steel, concrete, or gravel structure from which offshore development wells are drilled; structure can be nonplatform or platform.

plugged and abandoned - a well that has been permanently or temporarily abandoned. (see "abandoned well").

postlease - any activity on a block or blocks after the issuance of a lease on said block or blocks.

potential impact (effect) - the range of alterations or changes to environmental conditions that could be caused by a proposed action.

primary production - production of carbon by a plant through photosynthesis over a given period of time; oil and gas production that occurs from the reservoir energy inherent in the formation.

primary term - the initial period of an oil and gas lease, normally 5 years (see "lease term").

probabilistic resource estimates offshore (PRESTO) - MMS mathematical computer model used for offshore resource assessment.

production - activities that take place after the successful completion, by any means, for the removal of minerals, including such removal, field operations, transfer of minerals to shore, operation monitoring, maintenance, and workover drilling.

production well - a well which is drilled for the purpose of producing oil or gas reserves. It is sometimes termed development well.

prospect - an untested geologic feature having the potential for trapping and accumulating hydrocarbons.

recoverable reserves - Portion of the identified oil or gas resource that can be economically extracted under current technological constraints.

recoverable resource estimate - an assessment of oil and gas resources that takes into account the fact that physical and technological constraints dictate that only a portion of resources or reserves can be brought to the surface.

refining - fractional distillation, usually followed by other processing (for example, cracking).

request for interest - a notice published in the *Federal Register* that asks the oil and gas industry to provide information on its interest in leasing in a specified planning area as scheduled. This initial step is used in frontier areas to assist in determining whether the presale process should be initiated as scheduled, delayed, or cancelled.

reserve estimate - an assessment of the portion of the identified oil or gas resource that can be economically extracted.

reserves - portion of the identified oil or gas resource that can be economically extracted.

reservoir - a subsurface, porous, permeable rock body in which hydrocarbons have accumulated.

resources - concentrations of naturally occurring solid, liquid, or gaseous materials in or on the Earth's crust some part of which is currently or potentially extractable. These include both identified and undiscovered resources.

rig - a structure used for drilling an oil or gas well.

right-of-way - a legal right of passage, an easement; the specific area or route for which permission has been granted to place a pipeline, (and) ancillary facilities, and for normal maintenance thereafter.

risked, economically recoverable resource estimate - an assessment of undiscovered oil or gas resources that has been modified to take into account: physical and technological constraints on production; the influence of the costs of exploration, development, production, and market price on industry investment in OCS exploration, development and production; that economically recoverable resources may not exist within the area of interest.

rookery - the nesting or breeding grounds of gregarious (i.e., social) birds or mammals; also a colony of such birds or mammals.

sale - the public opening and reading of sealed competitive bids offered by companies or individuals for the right to explore for, develop, and produce certain minerals on the OCS.

sale area - the geographical area being offered for sale.

scoping - the process of or meetings held early in the EIS process and open to the public to determine the range and significance of issues to be addressed for each proposed leasing action.

seagrass beds - more or less continuous mats of submerged rooted marine flowering vascular plants occurring in shallow tropical and temperate waters. Seagrass beds provide habitat, including breeding and feeding grounds for adults and/or juveniles of many of the economically important shellfish and finfish. As such, this habitat type is especially sensitive to oil-spill impacts.

Secretarial Issue Document (SID) - the SID is used by the Secretary in reaching a decision on a potential offshore lease sale. It discusses issues and alternatives for the proposed action and is prepared by the MMS Regional office.

seeps-petroleum - Gas or oil that reaches the surface along bedding planes, fractures, unconformities or fault planes through connected porous rocks.

seismic - pertaining to, characteristic of, or produced by earthquakes or earth vibration; having to do with elastic waves in the earth, also geophysical when applied to surveys.

semisubmersible - a floating offshore drilling structure that has hulls submerged in the water but not resting on the seafloor.

sensitive coastal habitats - coastal habitats susceptible to damage from oil/gas-related OCS activities.

sensitive offshore area - an offshore area containing species, populations, communities, or assemblages of living resources, to which normal oil and gas exploration and development activities may cause irreparable damage, including interference with established ecological relationships.

shunting - a method used in offshore oil and gas drilling activities where expended drilling cuttings and fluids are discharged near the ocean seafloor rather than at the surface, as in the case of normal offshore drilling operations.

shut-in well - a well on which the valves have been closed for various reasons; a dependent well capable of production or a well that has been depleted and is in a suspended status.

spill - a sudden, unintentional, or accidental unplanned release of oil.

stipulations - specific measures imposed upon a lessee that apply to a lease. Stipulations are attached as a provision of a lease; they may apply to some or all tracts in a sale. For example, a stipulation might limit drilling to a certain time period of the year or certain areas.

studies conducted - shows the number of study contracts awarded that are applicable to the planning area, including directly-related, generic, and multiregion studies. Some studies are multiyear studies and/or may produce multiple reports. This number includes all studies completed and ongoing at the time this document is published.

subsistence uses - the customary and traditional uses by rural Alaska residents of wild, renewable resources of direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for making and selling of handcraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade.

supply boat - a vessel that ferries food, water, fuel, and drilling supplies and equipment to a rig and returns to land with refuse that cannot be disposed of at sea.

suspension of operations or production - an authorized temporary cessation or prohibition of activities on a leasehold. As of the effective date of a suspension, time on a lease stops for the life of the suspension, thus having the effect of extending the term of a lease for a period of time equal to the length of time of the suspension, except no lease shall be extended when the suspension is the result of negligence or willful violation.

taking - Harass, harm, pursue, hunt, shoot, wound, kill, capture, collect, or attempt to engage in any such conduct (including, but not inclusive actions which induce stress, adversely impact critical habitat, or result in adverse secondary or cumulative impacts).

threatened species - refers to any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and has been officially listed by the appropriate Federal agency; criteria for determination of threatened status can be found under "endangered species."

tract - an areal unit consisting of a single block or a combination of blocks identified from an official protraction diagram prepared by MMS; formerly used to identify blocks included in lease sales. Tract numbers are lease sale specific; obsolete term.

trawl - a large, tapered fishing net of flattened, conical shape that is typically towed along the seabottom.

trophic - feeding, trophic levels refer to the hierarchy of organisms from photosynthetic plants to carnivores, such as man; defined in terms of transfer of energy; trophic levels refer to the hierarchy of organisms from photosynthetic plants to carnivores, such as man; feeding trophic levels refer to the hierarchy of organisms from photosynthetic plants to carnivores in which organisms at one level are fed upon by those at the next higher level (e.g., phytoplankton eaten by zooplankton eaten by fish).

trunk line - A pipeline for the transportation of oil and or gas from producing areas to refineries or terminals.

turbidity -reduced water clarity resulting from the presence of suspended matter.

unitization -an approved document that groups together leases for various purposes. Two types of agreements are Unit Agreements and Communitization Agreements.

vascular plants -plants containing food and water conducting structures; higher plants which reproduce by seeds.

Volatile Organic Compound (VOC) - Any organic compound which is emitted to the atmosphere as a vapor.

vulnerability -the likelihood of being damaged by external influences. Vulnerability implies sensitivity of a system plus the risk of a damaging influence occurring.

water test areas -areas established by DOD where research, development, and the testing of military planes, ships, and weaponry takes place.

weathering - the aging of oil due to its exposure to the atmosphere and environment causing marked alterations in its physical and chemical makeup.

wetlands - areas periodically inundated or saturated by surface or groundwater and predominantly supporting vegetation typically adapted for life in saturated soil conditions.

zooplankton - animal plankton, mostly dependent on phytoplankton for its food source; animal plankton, small, freefloating animals, may be passive drifters or motile, dependent on phytoplankton as a food source.

B

Abbreviations and Acronyms

B. Abbreviations and Acronyms

AAPG	American Association of Petroleum Geologists
AAQS	Ambient Air Quality Standards
ABSORB	Alaska Beaufort Sea Oil Spill Response Body
ACAA	Alabama Coastal Area Act of 1976
ACAMP	Alabama Coastal Area Management Program
ACMA	Alaska Coastal Management Act
ACMP	Alaska Coastal Management Program
ACORPC	Alaska Cooperative Oil Spill Response Planning Committee
ADF&G	Alaska Department of Fish and Game
AEIDC	Arctic Environmental Information and Data Center
AEMA	Alabama Environmental Management Act
AEWC	Alaska Eskimo Whaling Commission
AFB	Air Force Base
ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Lands Conservation Act
ANWR	Arctic National Wildlife Refuge
AOGA	Alaska Oil and Gas Association
APD	Application for Permit to Drill
APFRT	American Peregrine Falcon Recovery Team
API	American Petroleum Institute
AQCR	Air Quality Control Regions
AQMD	Air Quality Management District
ARTC	Armament Research and Test Center
AS	Alaska statute
ASBS	areas of special biological significance
ASHA	Alaska State Housing Authority
ASRC	Arctic Slope Regional Corporation
AVCP	Association of Village Council Presidents
BAST	Best Available and Safest Technology
bbl	barrels
Bbbl	billion barrels
BBO	billion barrels of oil
BBOE	billion barrels oil equivalent
BCDC	Bay Conservation and Development Commission
Bcf	billion cubic feet
b/d	barrels per day
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMR	Bureau of Marine Resources
BOD	biological oxygen demand
B.P.	before present
BTF	Biological Task Force
Btu	British thermal unit
CalCOFI	California Cooperative Oceanic Fisheries Investigations
CARB	California Air Resources Board
CCA	California Coastal Act
CCC	California Coastal Commission
CCCCS	Central California Coastal Circulation Study
CCW	Clean Coastal Waters (CA oil spill cleanup cooperative)
CD	Conservation Division
CDFG	California Department of Fish and Game

CDOG	California Division of Oil and Gas
CEIP	Coastal Energy Impact Program
CEP	Council of Environment Protection
CEPEX	Controlled Ecosystem Pollution Experiment
CEQ	Council on Environmental Quality
CETA	Comprehensive Employment and Training Act
cf	cubic feet
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
cm	centimeter
cm^2	square centimeter
cm^3	cubic centimeter
CMP	coastal management program
CO	carbon monoxide
CO_2	carbon dioxide
COD	chemical oxygen demand
COE	Corps of Engineers
COG	Councils of Government
COPRDM	Committee on Ocean Pollution Research, Development, and Monitoring
CPC	Coastal Policy Council (State of AK)
CSI	Clean Seas Incorporated (CA oil spill cleanup cooperative)
CSLC	California State Lands Commission
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
db	decibel
dBa	decibels audible
DDT	dichloro-diphenyl-trichloro-ethane
DEC	Department of Environmental Conservation
DECA	Department of Economic and Community Affairs
DEIS	draft environmental impact statement
DEM	Department of Environmental Management
DM	Departmental Manual
DMA	Defense Mapping Agency
DNR	Department of Natural Resources
DOC	Department of Commerce (also: USDOC)
DOCD	Development Operations Coordination Document
DOD	Department of Defense (also: USDOD)
DOE	Department of Energy (also: USDOE)
DOI	Department of the Interior (also: USDOI)
DOT	Department of Transportation (also: USDOT)
DPP	Development and Production Plan (POD)
DWT	dead weight ton
EA	environmental assessment
E&D	Exploration and Development Report
EDA	Economic Development Administration
EEZ	Exclusive Economic Zone
EIS	environmental impact statement
EPA	Environmental Protection Agency (Also: USEPA)
ER	Environmental Report
ESA	Endangered Species Act
ESP	Environmental Studies Program
EWC	Eskimo Whaling Commission
FAA	Federal Aviation Administration

FACSFAC	Fleet Area Control and Surveillance Facility
FCMA	Fishery Conservation and Management Act of 1976
FCMP	Florida Coastal Management Program
FEIS	final environmental impact statement
FERC	Federal Energy Regulatory Commission
FM	fathom
FMP	Fishery Management Plan
FONSI	finding of no significant impact
FR	Federal Register
ft	foot
FWPCA	Federal Water Pollution Control Act
FWS	Fish and Wildlife Service
FY	fiscal year
g	gram
gal	gallon
GIS	Geographic Information System
GIWW	Gulf Intracoastal Waterway
GOM	Gulf of Mexico
GS	Geological Survey (also: USGS)
ha	hectare
hr	hour
HUD	Department of Housing and Urban Development
IPF	impact producing factor
ITL	Information to Lessees
IWC	International Whaling Commission
kg	kilogram
km	kilometer
km^2	square kilometer
kW	kilowatt
l	liter
L	long ton
lbs	pounds
LCRP	Louisiana Coastal Resources Program
LNG	liquified natural gas
LOOP	Louisiana Offshore Oil Port, Inc.
LTL	Letter to Lessee
m	meter
m^2	square meter
m^3	cubic meter
M	thousand
MAFLA	Mississippi, Alabama, Florida
Mbbl	thousand barrels
MBD	thousand barrels per day
MCP	Mississippi Coastal Program
mg	milligrams
mgd	million gallons per day
mi	mile
ml	milliliter
mm	millimeter
MM	million
MMbbl	million barrels
MMcf	million cubic feet
MMcfd	million cubic feet per day

MMPA	Marine Mammal Protection Act
MMS	Minerals Management Service
MODU	mobile drilling unit
MOU	Memorandum of Understanding
MPHC	marginal probability of commercial hydrocarbon
MPRSA	Marine Protection Research and Sanctuaries Act of 1972
MT	metric ton
MW	megawatt
MWe	megawatt (electric)
NAAQS	National Ambient Air Quality Standards
NAS	National Academy of Science
NASA	National Aeronautics & Space Administration
NCP	National Contingency Plan
NCSC	Naval Command System Center
NEPA	National Environmental Policy Act
ng	nanogram
NGPA	Natural Gas Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
nmi	nautical mile
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NO_x	nitrogen oxide
NPDES	National Pollution and Discharge Elimination System
NPFMC	North Pacific Fisheries Management Council
NPS	National Park Service
NRHP	National Register of Historic Places
NRT	National Response Team
NSB	North Slope Borough
NSF	National Science Foundation
NTL	Notice to Lessees
O_3	ozone
OCRM	Office of Ocean and Coastal Resource Management
OCS	outer continental shelf
OCSEAP	Outer Continental Shelf Environmental Assessment Program
OCSLA	Outer Continental Shelf Lands Act
OMB	Office of Management and Budget (State of Alaska)
OSC	on-scene coordinator
OSCP	oil spill contingency plans
OSRA	Oil Spill Risk Analysis
OSRAM	Oil Spill Risk Analysis Model
OS&T	Offshore Separation and Treatment
OIW	Oceanographic Institute of Washington
OWOCRS	Open Water Oil Containment and Recovery System
OCMP	Oregon Coastal Management Plan
ODFW	Oregon Department of Fish and Wildlife
ODSL	Oregon Division of State Lands
ODLCD	Oregon Department of Land Conservation and Development
ODEQ	Oregon Department of Environmental Quality
OPEC	Organization of Petroleum Exporting Countries
PAH	polyaromatic hydrocarbons
PCM	polychlorinated biphenyls

P.L.	Public Law
PM_{10}	10-micron particulate matter
PMTC	Pacific Missile Test Center
POCS	Pacific Outer Continental Shelf
ppb	parts per billion
pphm	parts per hundred million
ppm	parts per million
ppt	parts per thousand
PRESTO	probabilistic resource estimates offshore
PSD	Prevention of Significant Deterioration
RM	Regional Manager
RPC	Regional Planning Council
RRT	Regional Response Team
RS	Regional Supervisor
RSFO	Regional Supervisor, Field Operations
RTWG	Regional Technical Working Group
RU	Research Unit
SALM	Single Anchor Leg Mooring System
SBC	Santa Barbara Channel
SCB	Southern California Bight
sec	second
SHPO	State Historical Preservation Office/Officer
SID	Secretarial Issue Document
SMA	Special Management Area
SMSA	Standard Metropolitan Statistical Area
SO_2	sulfur dioxide
SO_x	sulfur oxides
sp.	species
spp	species
SPR	Strategic Petroleum Reserve
sq km	square kilometer
sq mi	square mile
stat	statute
TAP	Trans-Alaska Pipeline
tcf	trillion cubic feet
TDS	total dissolved solids
TEOR	thermally enhanced oil recovery
TMP	transportation management plan
TSP	total suspended particulates
TSS	traffic separation scheme
ug	microgram
ULCC	ultra large crude carrier
USAF	U.S. Air Force
USC	University of Southern California
U.S.C.	United States Code
USCG	U.S. Coast Guard
USDOC	U.S. Department of Commerce (also: DOC)
USDOI	U.S. Department of the Interior (also: DOI)
USEPA	U.S. Environmental Protection Agency (also: EPA)
USFWS	U.S. Fish and Wildlife Service (also: FWS)
USGS	U.S. Geological Survey (also: GS)
voc	volatile organic compounds
WSMC	Western Space and Missile Center

C

Comparative Environmental Analysis of Energy Alternatives to OCS Oil and Gas

COMPARATIVE ENVIRONMENTAL ANALYSIS OF ENERGY ALTERNATIVES TO OCS OIL AND GAS

Contract No. 14-35-0001-30498

Submitted to:
U.S. Department of the Interior
Minerals Management Service

Reference Report
March 1991

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ICF INCORPORATED

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CHAPTER I
INTRODUCTION

The purpose of this report is 1) to identify the range of energy alternatives to OCS natural gas and oil, 2) to identify the most likely energy alternatives, and 3) to present the production and transportation related environmental impacts of these energy alternatives.

This report is derived from a February, 1991 study prepared by ICF Resources for the Minerals Management Service entitled, *Comparative Analysis of Energy Alternatives*. That study, hereafter referred to as the Background Report, provides detailed support (including references) for much of the information included here. This report focuses on those aspects of the Background Report that relate to the environmental impacts of the energy alternatives. The Background Report includes an in-depth treatment of four subjects of interest to MMS: A conceptual framework for analyzing OCS oil and gas leasing and energy alternatives to OCS oil and gas; the likely U.S. oil and gas market response to reduced OCS oil and gas leasing; the economics of government imposition of certain alternatives to OCS oil and gas; and the environmental impacts of these alternatives.

The energy alternatives to OCS oil and gas identified in this report include both substitute supplies of oil and gas and reduced consumption of oil and gas. Reduced consumption alternatives include both conservation and fuel-switching.

The environmental impacts of the fuel-switching alternatives are difficult to compare to OCS oil and gas production because the alternate fuels have different environmental impacts over their entire life cycle of production, processing, transportation, and consumption. This report describes the production and transportation related environmental impact aspects of the energy alternatives commensurate with the OCS proposed action being examined in the Environmental Impact statement for the 1992-1997 5-year Program (Proposed Comprehensive OCS Natural Gas and Oil Program). The ICF Resources Background Report describes the environmental impacts associated with the entire life cycle of the energy alternatives.

The remainder of this report is organized into three chapters. Chapter II presents a brief conceptual framework for determining which of the potential energy alternatives to OCS oil and gas are likely to be selected in the marketplace. Chapter III describes the possible alternatives and indicates which ones are most likely to actually replace lost OCS oil and gas. Chapter IV describes the production and transportation related environmental impacts of these alternatives.

CHAPTER II

CONCEPTUAL APPROACH TO SELECT LIKELY OCS OIL AND GAS ALTERNATIVES

Petroleum is used in an amazing array of applications in the economy, both as a fuel and as a raw material to make other materials. In virtually any of these uses there are actual substitutes and many other potential substitutes. The selection of oil and gas in the marketplace rather than some other fuel or material for a particular use depends on the relative value and the relative cost of oil and gas relative to their alternatives in each use.

The relative value and cost of oil and gas and their alternatives change constantly in response to market events and technological change. In a market economy private individuals and firms independently evaluate and choose their alternatives based on their continuing evaluation of the current and expected future cost and the value of the attributes of the available alternatives. As a result, any attempt to estimate the future cost and value of oil and gas and their alternatives in the future must be speculative, based on information available today.

An analysis of the likely market substitutes for OCS oil and gas can be undertaken at different levels of aggregation. One approach is to estimate the likely overall change in oil and gas supply and demand in response to a limitation on expansion of OCS oil or gas production. An alternative, more disaggregated approach is to examine the economics of alternative technologies using different energy sources to provide the same energy-using service provided by OCS oil or gas. ICF Resources used both approaches in its evaluation of energy alternatives for MMS.

In ICF Resource's Background Report on energy alternatives to OCS oil and gas, statistical and other estimates of oil and gas market supply and demand responses to changes in price were used to determine the likely overall changes in U.S. oil and gas supply and demand if potential increases in OCS oil and gas production were limited over the 2000 to 2020 period. These estimates indicate how the U.S. oil and gas markets would respond to a relative reduction of OCS oil or gas in the absence of other government policies to more directly offset this.

Subsequently, ICF Resources identified and evaluated the economics of specific energy alternatives to OCS production and consumption of oil and gas. Although the range of actual and potential uses of oil and gas is very large, the largest quantity of oil and gas is and is expected to continue to be used in a relatively small number of major applications. The largest use of oil is in transportation and as a fuel in stationary applications. The principal use of gas is as a fuel in stationary applications. Both oil and gas are also used as a raw material in industry, but this is a minor use. Consequently, ICF Resources' approach to select energy alternatives to oil and gas for in-depth analysis was to look for commercial or near-commercial alternatives to their use as a fuel in their major applications.

Evaluating the economics of energy alternatives to oil and gas can be problematic because the alternatives in many cases are not comparable. Energy alternatives have many characteristics, and they may be more or less attractive than oil and gas at the same price in different applications. For example, vehicles can operate on many different fuels, but each fuel has its own requirements for storage and conversion into motion energy, and each fuel may also have different capabilities to provide vehicle power and acceleration using the technology available at any time.

LIFE-CYCLE COST ANALYSIS

One method used to compare alternatives is life cycle cost analysis. In this approach the good or service desired by consumers is standardized with respect to its characteristics as much as possible, and then the (discounted) life cycle cost is estimated for each alternative. Life cycle cost analysis permits the comparison of energy alternatives with different useful lives and with different capital and operating costs. Using this approach, each alternative can be evaluated on a common basis, such as annualized cost per mile over its useful life. The use of life cycle cost analysis to make choices between different technologies is called least cost planning, and to some degree consumers use this approach either explicitly or implicitly when they choose alternatives in the marketplace.

ICF Resources used life cycle cost analysis to determine whether government imposition of the identified energy alternatives would likely yield net costs or savings to the nation as a replacement for OCS oil and gas over the 2000 to 2020 time period. This report makes use of both the overall market analysis and the results of the life cycle cost analysis in the Background Report to determine which energy alternatives are more likely to be the replacements selected for OCS oil and gas in the market place.

CHAPTER III

POTENTIAL ENERGY ALTERNATIVES TO OCS OIL AND GAS

ALTERNATIVES CONSIDERED

Over the last twenty years many energy alternatives to oil and gas have been identified and analyzed as a means to reduce dependence on foreign oil or to reduce the environmental impacts associated with oil and gas use. These alternatives, plus other oil and gas sources, are all potential substitutes for OCS oil and gas. A list of many of these alternatives is shown in Table III-1. ICF Resources concludes that some of these alternatives are either potentially significant substitutes and relatively attractive from an economic and/or environmental standpoint or relatively unattractive, at least at this time. The relative attractiveness of any alternative constantly changes, of course, as technology changes.

TABLE III-1
Possible Energy Alternatives to OCS Oil and Gas

Oil and Gas Supply Substitutes	
- U.S. Onshore Conventional Oil - Domestic Enhanced Oil Recovery - Tar Sands - Imported Oil - Oil from Shale	- U.S. Onshore Conventional Gas - Tight Sands Gas - Coalbed Methane - Devonian Shale - Imported Gas
Fuel Substitutes	
- Nuclear (Electric) - Coal - Coal Synfuels (Liquids or Gas) - Geothermal - Hydro (Electric) - Wind (Electric) - Tidal Power - Ocean Thermal (Electric) - Photovoltaic - Solar Radiation Concentrators	- Solar Ponds - Wood (natural or plantation) - Methanol (from natural gas or coal) - Ethanol (from corn, sugar cane, or biomass) - Agricultural Biomass - Municipal Waste - Hydrogen - Peat - Waste Heat
Conservation	
- Improved Building Shells - More Efficient Conversion Technologies (e.g., CAFE, Appliance efficiency) - Reduced Amounts of Goods and Services	

Based on a preliminary economic screening, ICF Resources developed a list of energy alternatives to OCS oil and gas for an in-depth economic analysis. In the screening process, a literature review was conducted to identify alternatives which have demonstrated promise in previous studies, and for which cost data were available. These alternatives, along with any others that were either included in the National Energy Strategy (NES) baseline or specifically requested by MMS, were included in the short list for in-depth environmental analysis. The list (Table III-2) includes both market-driven and government imposed alternatives.

TABLE III-2
Energy Alternatives Considered for Environmental Analysis

Energy Alternatives to OCS Oil:

- Supply substitution
  - — Increased onshore domestic oil production
  - — Increased imports of oil
- Fuel substitution in transportation
  - — Imported methanol - from foreign natural gas
  - — Gasohol - ethanol from corn
  - — Compressed natural gas - from domestic natural gas
  - — Electric cars
- Conservation measures
  - — Transportation - increased fuel economy/diesel engines/public transportation
  - — Industrial - reduced consumption of plastics

Energy Alternatives to OCS Natural Gas:

- Supply substitution
  - — Increased onshore domestic gas production
  - — Increased liquid natural gas (LNG) imports
- Fuel substitution in electricity generation
  - — Coal
  - — Nuclear
  - — Residual fuel oil
- Renewable sources of electricity generation
  - — Wind
  - — Solar Thermal
  - — Photovoltaic
  - — Hydropower
- Conservation measures
  - — Conservation in residential gas appliances

An environmental analysis of the production and transportation aspects of each of these alternatives is presented in Chapter IV.

MARKET DRIVEN SUBSTITUTES IF OCS DEVELOPMENT IS LIMITED

In the event that OCS production is limited, the Administration is not likely to institute any specific measures designed to offset the effect of reduced OCS oil or gas production. Consequently, the energy alternative substitution effects and related environmental effects are likely to be those that occur due to market forces.

The immediate effect of reduced OCS oil or gas production is likely to be a very small increase in the price of oil or gas. In response supplies would increase somewhat from other U.S. sources and imports, and demand would decline slightly due to conservation and fuel-switching.

ICF Resources analyzed the likely aggregate market response to a reduction of OCS oil and gas over the 2000 to 2020 period in the Background Report cited earlier. The projected market response is based on the results of a review of current literature on energy market behavior and the application of statistical models of the energy market to the NES baseline.

ICF Resources found that the principal response to reduced OCS oil would be an increase in imported oil and the principal response to reduced OCS gas would be both increased U.S. onshore gas production and switching to oil (residual fuel), principally in utility boilers. The likely proportions of each of these substitutes and other minor substitutes, including U.S. oil production, switching from oil to gas, and gas imports are shown in Table III-3.

TABLE III-3
Market Changes Associated With Loss of One Unit of OCS Oil or Gas

Market Activity	Change	Market Activity	Change
Lost OCS Oil	(1.00)	Lost OCS Gas	(1.00)
Increased Oil Imports	0.86	Increased Gas Imports	0.08
Increased Domestic Onshore Oil Production	0.04	Increased Domestic Onshore Gas Production	0.44
Oil Conservation*	0.06	Gas Conservation*	0.14
Switch to Gas	0.04	Switch to Oil	0.34

* Plus possible minor switching to energy sources other than oil or gas

CHAPTER IV
ENVIRONMENTAL IMPACTS OF ENERGY ALTERNATIVES

This chapter summarizes the environmental impacts associated with the alternatives to OCS oil and gas described earlier in this report (Table III-2).

Given the complexities and range of the environmental problems associated with the potential energy alternatives to OCS oil and gas, for discussion purposes ICF organized the impacts into four very broad categories: air, water, land, and societal. These four categories were further divided into subcategories. These categories and subcategories were used because they reflect the major elements of environmental impact usually associated with the production and use of energy. Table IV-1 shows these categories and subcategories.

TABLE IV-1
Categories of Environmental Impacts

Air Impacts	Water Impacts	Land Impacts	Societal Impacts
• Ambient Pollution - Regulated pollutants - Toxic chemicals - Tropospheric ozone • Stratospheric Ozone • Acid Rain • Global Warming (greenhouse gases) • Noise	• Surface Water Pollution • Groundwater Contamination • Ocean Pollution	• Solid Wastes - Toxic waste - Non-toxic waste - Radioactive waste • Loss of Wetlands • Disrupted Wildlife Habitat • Soil Erosion/ vegetation loss	• Scenic Pollution • Health and Safety • Change in land use • Other

APPROACH USED TO ANALYZE EACH ALTERNATIVE

In order to give a succinct overview of the environmental impacts, summary matrices (Tables IV-2 through IV-18) were created for each alternative to show each of the subcategories of air, water, land and societal impacts identified in Table IV-1. A comparison of these environmental impacts across alternatives is presented in Tables IV-19 and IV-20.

The summary matrices indicate whether there is an environmental impact by showing either Y (yes) or N (no). This format readily allows a comparison of each alternative with another. This system does not indicate the relative severity of the impacts. In other words, a Y under the category SO_x for the final consumption of both coal and OCS oil does not mean that both produce the same amount of emissions of SO_x per Btu of energy, but rather indicates that both fuels produce enough SO_x to have an adverse impact on ambient air quality. Nevertheless, if there is a Y for one alternative and an N for another, then one could infer that one alternative was advantageous in that respect.

In attempting to designate whether there would be an impact, an implicit threshold level had to be established. If there was a consensus in the studies consulted that there would be a potential or definite impact, a Y was used. An N was used only if there appeared to be no reasonable possibility for adverse environmental implications. When appropriate, the Y is asterisked to provide the assumptions and reasoning behind the choice. Again, the generic impacts can be disputed. Each site will have not only different severities of impacts but possibly different impacts altogether. A listing of all abbreviations used, not only in the matrices, but also in the text, follows:

Abbreviations Used in the Study

Aldehyd.	aldehydes such as formaldehyde and acetaldehyde
BTX	benzene, toluene, and xylene
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
g/mi	grams per mile
GT/yr	gigatons per year
NA	not available
N_2O	nitrous oxide
NO_x	nitrogen oxides
Part.	particulates
SO_x	sulfur oxides
Strat.	stratospheric ozone
Trop.	tropospheric ozone
VOC	volatile organic compound
–	not applicable

This analysis only considers the environmental impacts of an alternative within the U.S. The environmental impacts summarized in this reference report include those associated with finding, producing, and transporting each alternative. Impacts associated with the whole fuel cycle (including consumption) are presented in the Background Report.

For reference purposes, a detailed overview of the environmental impacts of OCS oil and gas at each step in an illustrative fuel cycle has been provided in Tables IV-2 and IV-3. A discussion of these fuel cycle impacts has not been included as that is beyond the scope of this study. However, a discussion of the environmental impacts of offshore exploration, production, and transportation impacts can be found in the U.S. Department of the Interior's Outer Continental Shelf Oil and Gas 5-year Leasing Program, Mid-1987 to Mid-1992.

SUPPLY SUBSTITUTION ALTERNATIVES TO OCS OIL

There are two major energy alternatives that constitute direct supply substitution for OCS oil: increased onshore domestic crude oil and increased imports of crude oil.

Increased Onshore Domestic Crude Oil

The greatest potential for significantly increasing the domestic crude oil supply lies with the successful application of enhanced oil recovery (EOR) processes to known reservoirs and by additional drilling in existing fields (infill drilling). Conventional oil recovery methods, which rely upon natural reservoir energy to drive the oil through the complex porous underground rock formations and upon secondary processes such as gas reinjection or water flooding, are ultimately expected to produce only about one-third of the original oil discovered. The oil left in the reservoirs after conventional recovery operations remains either trapped in the pore space of reservoir rock or as oil films coating the pore walls due to capillary or surface forces.

EOR, utilizing advanced process technologies, can markedly increase the effectiveness of oil recovery both by reducing or eliminating the capillary forces that trap the oil within the pores and by thinning the oil to lower its viscosity and thereby increasing its mobility and ultimate recovery. The net potential addition to domestic crude oil supply through EOR methods is equivalent to approximately 40% of the current recoverable U.S. reserves.

EOR processes can be divided into the following general categories:

- Chemical flooding methods
- Miscible flooding methods
- Thermal recovery methods

Chemical flooding methods improve on conventional water flooding methods by adding chemicals to the injected water. Polymers, surface active chemicals, and inorganic alkaline chemicals are used currently in polymer flooding, surfactant flooding, and alkaline flooding respectively. They effectively lower the viscosity of the oil and reduce the capillary forces that trap the oil in the pores of the rock, allowing increased flow rates and thus recovery.

TABLE IV-2
Illustrative Case for OCS Oil

	AIR IMPACTS											
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
OCS Oil	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	(VOC+ NO_x)	(NO_x)		
Offshore Extract/Product.	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y
Transport												
Pipeline	N	Y	N	Y	Y	NA	Y	Y	Y	Y	Y	Y
Tanker	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
OCS Oil	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Pollut.	Other
Offshore Extract/Product.	N	N	Y	N	N	Y	Y	N	N	Y	Y
Transport											
Pipeline	Y	Y	Y	N	N	Y	N	N	N	N	N
Tanker	Y*	Y*	Y	N	N	Y	Y	Y	N	Y	Y

* Site specific.

TABLE IV-3
Illustrative Case for OCS Natural Gas

AIR IMPACTS												
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
OCS Gas	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Offshore Extract/Product.	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y
Transport-Pipeline	N	Y	N	Y	Y	NA	N	Y	Y	Y	Y	Y
Processing	Y	Y	N	Y	Y	NA	Y	Y	Y	Y	Y	Y

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
OCS Gas	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Non-toxic	Toxics	Radioact Waste	Scenic Pollut.	Other
Offshore Extraction	N	N	Y	N	N	N	Y	N	N	Y	Y
Transport-Pipeline	N	N	N	N	N	N	N	N	N	N	N
Processing	Y*	Y*	N	N	N	N	N	N	N	Y	Y

* Impacts to groundwater and surface water will be minimal due to strict federal containment laws.

Miscible flooding is a process whereby carbon dioxide, nitrogen, or hydrocarbons are injected into a reservoir under significant pressure and mix with the remaining oil. CO_2 flooding has the greatest potential because of its moderate cost and its greater miscibility characteristics compared to other gases. Miscibility exists when the carbon dioxide is able to mix in all proportions with the oil, thus overcoming the capillary forces that otherwise trap oil in pores of the rock. When CO_2 contacts the oil, it extracts some of the hydrocarbon constituents of the oil, creating a hydrocarbon-enriched CO_2 mixture and a CO_2-enriched in situ oil. These mixtures lower the viscosity of the oil allowing mobility. The CO_2-hydrocarbon mixtures are then processed to recover valuable light hydrocarbons.

Thermal EOR processes add heat to the reservoir to reduce oil viscosity and/or vaporize the oil. In both instances, the oil is made more mobile so that it can be more effectively driven to producing wells. In addition to adding heat, these processes provide a driving force to move oil to the producing wells. The principal methods of thermal recovery are:

- Steam injection
- In Situ combustion

In recent years, steam flooding has acquired a major role in the recovery of crude oil, especially heavy, viscous oil. The process involves the injection of steam, generated at the surface, into the reservoir, continuously and in cycles. The period of steam injection is followed by production of reduced-viscosity oil and condensed steam. Normally, steam driven projects are developed where the wells are closely spaced because the heat can be shared between adjacent injection and production wells.

In situ combustion is normally applied to reservoirs containing low-gravity oil. Heat is generated within the reservoir by injecting air and burning part of the crude oil. This serves to reduce oil viscosity and partially vaporizes the oil in place. The oil is driven forward by a combination of steam, hot water, and gas drive.

The EOR methods discussed in this report (chemical, miscible, and thermal) have certain environmental impacts that are common to all three methods. A key common feature is the need to inject liquids or gases to mobilize and displace the otherwise unrecoverable oil. EOR activities do not usually impose significant additional negative impacts in areas where primary and secondary recovery has already occurred.

Besides EOR methods another means of increasing the amount of onshore recoverable reserves is through infill drilling with improved secondary oil recovery methods. Historically, production wells, drilled at traditional uniform spacing, are unlikely to contact the entire reservoir. With infill drilling, the wells are drilled at closer intervals, thereby improving reservoir contact. With implementation technology and an oil price of $24.00 per barrel, 3.3 billion barrels of additional oil reserves could be added from infill drilling.

As indicated in Table IV-4, increased production of onshore domestic crude oil, whether from infill drilling or EOR, will produce air, water, land, and societal impacts. These impacts are discussed in detail below.

Air Impacts

The atmospheric emissions of concern from increased production of onshore domestic crude oil are dust, engine exhaust, off-well gases, gas-flaring products, particulates, SO_2, CO, NO_x, H_2S, and hydrocarbons. In thermal processes, increased emissions can come from boiler combustion products,

TABLE IV-4
Increased Onshore Domestic Crude Oil Production

AIR IMPACTS												
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Onshore Oil	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Onshore Extract/Product.	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y
Transport-Pipeline	N	Y	N	Y	Y	NA	Y	Y	Y	Y	Y	Y

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Onshore Oil	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands *	Nontoxic	Toxics	Radioact Waste	Scenic Pollut.	Other
Onshore Extraction	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y
Transport-Pipeline	Y	Y	N	N	N	Y	N	N	N	N	N

* Site Specific

vented steam containing H_2S and hydrocarbons, and the potential vaporization of the chemicals added to the reservoirs to enhance fluid mobility.

CO_2 miscible flooding produces emissions of H_2S, a toxic and odoriferous gas, and short-term, local blanketing concentrations of CO_2. Nonroutine air emissions can result from accidental spills or releases of chemicals and gases. The associated emissions of SO_x, NO_x, and VOCs contribute to acid rain and tropospheric ozone formation. Additionally, emissions of NO_x could likely have negative impacts on stratospheric ozone. These atmospheric emissions also can potentially degrade local air quality if they are not closely monitored.

Because the greenhouse gas emissions for the post-production fuel cycle are similar to OCS oil, any incremental greenhouse gases associated with the increased domestic crude oil fuel cycle would occur at the well-site. However, the gas emissions, produced at an onshore well-site, are considered to be insignificantly different from those produced at an offshore well-site.

Additionally, most studies do not differentiate between conventional and EOR recovery processes. Because EOR techniques are usually initiated after primary and usually secondary conventional recovery methods in existing fields, EOR could generate less greenhouse emissions than conventional production. A potential additional source of CO_2 from EOR recovery is from the use of CO_2 in miscible flooding. Generally, CO_2 miscible flooding produces a substantial output of CO_2 from the producing wells. Normal oil field practice is to strip the valuable light hydrocarbons from the gas stream and then reinject the CO_2. There is some leakage of fugitive emissions, but they are considered to be minor. Steam injection processes may also contribute additional greenhouse gas emissions from the burning of heavy fuel oils or crude oil to make steam.

Water Impacts

As shown in Table IV-4, production of additional domestic crude oil could cause environmental impacts on both surface and groundwater. Before initiating any EOR process, spent fluids (drilling muds) have to be disposed of. The primary waste of onshore oil and gas production is the "produced water" that exists naturally in an oil and gas formation and is separated from the oil at the wellsite. This liquid contains oil, salts, trace heavy metals, solids, and organic chemicals, which are usually disposed of in storage ponds or are reinjected back into the reservoir. Although strict federal and state regulations are designed to prevent serious water impacts, underground and surface water contamination may occur if these fluids are leaked into aquifers or subsurface water during transportation to disposal sites or through leakage or runoff from the storage ponds.

The primary concern with EOR processes is the substantial use of water combined with the use of a wide range of chemicals, many of which are known to pose health hazards and are subject to OSHA and NIOSH regulations. Surface waters can be contaminated by spills of these chemicals during transportation, onsite manufacturing, and handling. Injection wells are designed to prevent environmental problems from injected fluids, but leaks at injection plants, injection lines, and wellheads could lead to pollution of surface water and subsurface drinking water supplies.

As mentioned previously, thermal and chemical recovery processes require the injection of various chemicals and additives into the reservoirs. However, a high fraction of these inputs are unrecoverable and are left in the reservoir where they could become a problem because many of the deeper EOR wells pass through ground water zones. Toxic or hazardous substances may be produced during decomposition of these additives. If these substances migrate from the reservoir into other strata and water aquifers, potential pollution of subsurface drinking water could occur. In addition, chemicals and the CO_2 are injected under high pressure. If the injection lines are old or corroded, they could possibly fracture and cause chemical contamination of ground water zones.

Current chemical EOR methods have the potential for using large volumes of freshwater, thereby creating water shortages and water impacts due to freshwater drawdown. However, in the future, EOR processes are supposed to make use of as much recycled water as possible.

Water quality degradation may also occur in cases of blowouts, spills, and leaks. Wells normally are sealed when production ends, but degradation of water quality may occur upon abandonment of a producing oil field. Batteries, tanks, sumps, and pipelines may deteriorate and release pollutants into adjacent surface and ground waters.

Land Impacts

Increased onshore crude oil production, whether from infill drilling or EOR projects generally will only occur in areas in which oil production activities already exist. However, EOR processes use more land than conventional oil recovery techniques as more production and injection wells need to be drilled, and larger areas for waste disposal are necessary. In addition, should large scale EOR projects be started using miscible flooding techniques, a CO_2 pipeline would probably have to be constructed as well as pressurized storage tanks near the site. Within developed fields, land use impacts will vary in severity depending upon the amount of additional drilling and new chemical production facilities that are required.

From Table IV-4, it is evident that the activities associated with domestic onshore crude oil production could impact vegetation, wildlife, and wetlands. Off-road vehicles, seismic activity, drilling of test wells, excavation of construction materials (sand and gravel), and the building of service roads and drilling pads cause soil particles to become unconsolidated and increase the soil's susceptibility to wind and water erosion. Accidents, such as fires, explosions, blowouts, spills, and leaks, could cause adverse impacts to terrestrial vegetation. In areas where unstable soils are located and where the potential for revegetation is low, such activities can cause long range impacts on soil stability and vegetative cover.

Formation solids, more commonly called drill cuttings, which are produced during the excavation stage, are the main solid wastes produced during domestic crude oil's fuel cycle. These cuttings have no significant environmental impact. EOR processes may accumulate chemical wastes from water treatment and substantial scrubber waste from thermal projects. Both types of wastes must be treated and/or disposed of in the approved fashion.

The use of steam generators and air compressors for EOR thermal recovery processes creates considerable noise and could disturb wildlife populations and habitats.

Societal Impacts

Production activities and their physical disturbances to the land may be considered an eyesore by adjacent communities. However, the societal impacts that are of the most concern to the public are occupational health and safety issues. When the CO_2 flooding process is used, it is possible that large quantities of CO_2 will escape that can potentially blanket a local area with a smothering atmosphere for a short period of time. Various chemicals used during flooding are, in most instances, toxic at high concentrations and may be carcinogenic. While the concentration levels of these chemicals are considered to be nontoxic at the injection and production sites, exposure to them during delivery and mixing, while at high concentration levels, does pose a significant safety hazard.

Conclusion

The major environmental impacts associated with expanded domestic onshore oil production using EOR techniques include: potential degradation of local ambient air quality from atmospheric emissions of dust, engine exhaust, off-well gases, gas-flaring products, particulates, SO_2, CO, NO_x, H_2S, and hydrocarbons and the consequent formations of acid rain, tropospheric ozone, and depletion of stratospheric ozone; potential degradation of local and national air quality due to emissions of greenhouse gases, especially CO_2 used in miscible flooding; possible degradation of both surface water and groundwater quality from spills or leaks of process chemicals during handling, mixing, or injection; increased potential for chemical contamination of drinking water by injected fluids left in the reservoir; expanded land use through more intensive field development, i.e., more wells, roads, injection lines, and facilities; and health risks to workers from the handling of the toxic chemicals used in thermal and chemical recovery processes.

Increased Imported Oil

Oil production overseas will produce air emissions comprised of U. S. regulated pollutants and toxics. Some of these pollutants (NO_x, SO_x, and VOCs) are precursors of acid rain and ozone formation, but these impacts are unlikely to occur in the U.S. However, the greenhouse gas emissions associated with this oil production have national as well as international impacts.

Although environmental impacts associated with the production of imported oil should not be ignored, they are beyond the scope of this study. This discussion is limited to those impacts that affect the United States. In the case of imported oil, the environmental impact analysis will begin when the tanker transporting the oil enters U. S. waters. The analysis will end when the imported oil is landed in the U.S.

Air Impacts

As indicated in Table IV-5, air emissions associated with tanker transport of oil are generated by the combustion of tanker fuel during transport, the use of auxiliary power at dockside, and from the cargo itself. During transport, a marine vessel emits pollution from its smokestacks by virtue of the fuels that it burns. The most common tanker fuels are petroleum-based marine diesel, residual fuel oil, and Bunker C. In burning petroleum-based fuels, the tanker emits sulfur oxides, nitrogen oxides, carbon monoxide, particulates, and reactive hydrocarbons, in addition to toxic aldehydes. The amounts and qualities of the emissions produced underway are influenced by the distance traveled by the tanker, the type of fuel consumed, operating speed, and load.

TABLE IV-5
Increased Imported Oil

AIR IMPACTS												
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Imported Oil	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	(VOC+ NO_x)	(NO_x)		
Overseas												
Extract./Prod.												
Transport-Pipeline												
Ocean Transport* - Tanker	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y

* Impacts associated with ocean transport are only noted from point where tanker enters U.S. waters.

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Imported Oil	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Pollut.	Other
Overseas											
Extract./Prod.											
Transport-Pipeline											
Ocean Transport*-Tanker	Y**	Y**	Y	Y***	Y***	Y***	Y	Y	N	Y***	Y

* Impacts associated with ocean transports are only noted from point where tanker enters U.S. waters.

** Site specific.

*** Applicable only if new ports are required.

At dockside, power must be made available for lighting, heating, pumps, refrigeration, etc. Some marine vessels will use a diesel-powered auxiliary system, while the majority operate on one or more main boilers. Again, the quality and amounts of emissions produced will depend on both the amount and type of fuel consumed.

Separate from the emissions produced at dockside by normal tanker operations are those emitted by the cargo during unloading processes or the associated ballasting operations. On old tankers that do not have clean or segregated ballast tanks, ballast water is pumped into the emptying storage tanks in order to improve the stability of the vessel. As the water is pumped in, the hydrocarbon vapors present in the storage compartments prior to unloading are displaced to the air as VOC emissions. The amount emitted is dependent on the volatility of the oil. In new tankers with segregated ballast, as the cargo is unloaded, a crude oil washing system in conjunction with an inert gas system (essentially scrubbed stack gases, i.e. CO_2) come into play. Fugitive emissions from the cargo are forced through ullage ports and are thereby dispersed in the air. Hydrocarbons may also be emitted during the cleaning of the storage compartments of the tanker after unloading, though this is usually done at sea. In addition, when a tanker is loading, it must vent the inert gas blanket from its tanks. Since this is largely CO_2, loading operations may result in substantial greenhouse gases being emitted.

The emissions of regulated pollutants, especially NO_x, SO_x, and VOCs, from tanker transport and dockside activities will have an impact on acid rain and tropospheric ozone formation. Additionally, the emissions of NO_x could likely have negative impacts on stratospheric ozone. Some ports, such as Los Angeles, have already taken steps to control these emissions by requiring tankers to use only low sulfur fuel while in port.

The greenhouse gases generated during tanker transport, along with those gases generated during production, distribution, and consumption, can be quantified. EPA estimated the individual emissions for CO_2, CH_4, and N_20 for the imported oil's fuel cycle. These totals were derived by quantifying the individual emissions from production through combustion of the gasoline in the vehicle. Total greenhouse gas emissions for the imported oil fuel cycle would be higher than with OCS oil. The differentials (3% for CO_2, 130% for CH_4, and 4% for N_2O) would be due primarily to the flaring of associated gas during production (It was assumed that the U.S. flared very little because it is illegal.) and the additional, incremental emissions associated with the tanker transport of imported oil.

Water Impacts

The primary hazard to the natural environment from an increase in oil imports is the possibility of oil spills which can result from accidental discharge, intentional discharge, and tanker casualties. Coastal spills that are not dealt with properly or expediently can have disastrous effects on sea birds, marine mammals, and benthic organisms. In some cases, localized habitats can be permanently altered. If the spill occurs near a shoreline and the oil is washed onto a beach, the primary concern is the contamination of groundwater.

Oil pollution also occurs with operational discharges. These include the intentional and illegal dumping of dirty ballast, tank washings, and bilges overboard. The various national and international laws and protocols covering tanker operations have attempted to deal with the problem; clean ballast, segregated ballast, crude oil washing systems, and "load on top" operations have all helped in mitigating some of the impacts of normal, noncatastrophic, tanker operations. In addition, terminals are supposed to provide slop tanks into which tankers may discharge oily wastes. However, many terminals do not provide the service., The recently signed Oil Pollution Act of 1990 attempts to further guard against the possibility of oil spills by requiring, among other things, changes in the design structure of tankers, specifically double hulls.

Land Impacts

Land impacts associated with imported oil result from oil spills that are washed onto beaches or marshes. The flora and fauna supported by mudflats and marshes could be adversely affected.

Ocean tankers are potential sources of waste materials that require disposal. Whenever the tankers' cargo tanks are cleaned, sludges are removed that may exhibit hazardous waste characteristics. These wastes are usually handled at terminals or at shipyards.

Societal Impacts

The primary public fear is that increased imported oil brought to the U.S. by tanker will mean an increased frequency of oil spills. Not only do oil spills have disastrous effects on surface and groundwater quality and sea birds and benthic organisms, but they also adversely impact the aesthetics and recreational purposes of the surrounding area. Additionally, as more tankers are needed to transport the foreign oil, ports will become more congested. A substantial growth in imported oil would require either port expansion or the construction of new ports. Since the major oil import ports are often in large urban centers, port expansion brings with it land use impacts, air emissions, and water impacts.

Conclusion

The major environmental impacts associated with the expanded importation of oil for use as an energy alternative to OCS oil include: the generation of greenhouse gases and regulated air pollutants from both transport and dockside activities, emissions of NO_x, SO_x, and VOCs having an impact on acid rain, tropospheric and stratospheric ozone formation; degradation of water quality in the instance of oil spills from either accidental or intentional discharges or tanker casualties; possible destruction of flora and fauna and recreational and scenic land and water areas in the instance of oil spills; and the public's fear of the increased likelihood of oil spills.

FUEL SUBSTITUTION IN TRANSPORTATION

Over 40% of petroleum products supplied in the United States are consumed in the transportation sector. Any reduction in demand for petroleum in the transportation sector would have a substantial impact. Two approaches are examined. The first, examined in this section, is product substitution whereby an alternative fuel, which may be less polluting than petroleum, is substituted for petroleum. The second alternative, examined in the subsequent section, is conservation whereby less petroleum is used, either from increased efficiency in individual vehicles or from more use of public vehicles.

Imported Methanol From Foreign Natural Gas

The production of natural gas overseas and the subsequent conversion of the gas into neat or M100 (or M85) fuel methanol will produce regulated air emissions and air toxics. Since this study is limited to analyzing only those impacts that affect the U. S., it will only begin considering the fuel cycle impacts of imported methanol from the point at which the tanker transporting the fuel enters U.S. waters.

Air Impacts

Air emissions from the methanol fuel cycle, that this study will consider, occur during tanker transport. These impacts are noted in the matrix shown in Table IV-6.

The air emissions associated with tanker transport and docking will be similar to those of imported oil transport which were discussed in the previous section. However, because methanol, the end-product, has a much lower BTU content than gasoline and more gallons of methanol are required to power vehicles the same distance, more methanol would need to be imported relative to crude oil. Thus, transport emissions from tankers carrying methanol would be higher than for imported oil used to power vehicles. Another difference would be the additional methane vapors emitted from the methanol cargo. However, these emissions will not be very significant due to the low volatility of methanol fuel.

Water Impacts

Methanol spills or leaks into the ocean, rivers, or groundwater supplies are an environmental hazard, as noted in the Table IV-6, due to the fuel's toxicity. With increased use of fuel methanol, the probability of these spills will increase due to the larger quantities of methanol fuel that will be transported. Methanol spills in and around water could harm aquatic ecosystems. However, methanol's rapid biodegradability and solubility in water leads to rapid dispersion, dilution, and evaporation of the spilled fuel, resulting in less exposure to the toxicity. The only disastrous scenario would be if methanol were spilled very near a well containing drinking water supplies. Methanol's absence of color, odor, and/or taste could allow the methanol to go undetected.

Land Impacts

The effects of on-land spills or leaks at the port site have a potential to harm terrestrial ecosystems. Again, however, methanol's biodegradability and volatility lessens the potential damage. Terrestrial systems usually recover within a matter of weeks, while the effects on vegetation can last more than a year.

Because more tankers will be needed to transport the imported methanol, expansion of existing ports may be required, which would have impacts on the air, water, and land during construction.

Societal Impacts

The primary concerns with methanol are health and safety issues. Because methanol is very toxic, ingestion of or skin contact with the fuels could be deadly. This is a major concern with M100 because it has no taste, color, or detectable odor so that such exposure could occur inadvertently.

TABLE IV-6
Methanol from Foreign Natural Gas

AIR IMPACTS												
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Methanol From Foreign Natural Gas	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Overseas												
Extract./Prod.												
NG Transport-Pipeline												
Methanol Conversion												
Ocean Transport*-Tanker	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y

* Impacts associated with ocean transport are only noted from point where tanker enter U.S. waters.

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Methanol From Foreign Natural Gas	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Pollut.	Other
Overseas											
Extract./Prod.											
NG Transport-Pipeline											
Methanol Conversion											
Ocean Transport*-Tanker	Y**	Y**	Y	Y***	Y***	Y***	Y	Y	N	Y***	Y

* Impacts associated with ocean transport are only noted from the point where tanker enters U.S. waters.

** Site specific.

*** Applicable only if new ports are required.

Methanol also becomes more of a safety hazard than oil in the event of a fire. Methanol characteristically burns with a nearly invisible flame.

Conclusion

The major environmental impacts associated with expanded use of imported methanol as an alternative to gasoline include: the deterioration of air quality from the emissions of various regulated pollutants during tanker transport; possible water and land degradation in the instance of spills or leaks and port expansion; and concern about health and safety issues.

Ethanol From Corn

Ethanol can be made from non-food biomass such as lignocellulosic material, trees, grass and wastepaper, but the commercial production method utilizes corn. Ethanol that is produced from the bioconversion of corn, utilizing fermentation and distilling processes, is currently splash-blended with gasoline at a 10% concentration prior to final delivery to the service station. This fuel is known as gasohol. As seen in Table IV-7, ethanol production will produce air emissions of regulated pollutants, greenhouse gases, and toxic chemicals. Wastewater that has the potential to adversely affect surface water and groundwater will be generated during both corn production and ethanol biomass conversion. Solid wastes will be produced from ethanol conversion, and corn production will have serious impacts on the land. The impacts associated with the gasoline component of gasohol will be the same as those generated during the normal oil production and transportation process.

Air Impacts

Bioconversion plants for ethanol production generate more air pollution per unit of energy output than any other fuel production process mentioned in this study. Unlike the other transportation fuel production processes, ethanol bioconversion produces air emissions primarily from the combustion of process fuel for heating purposes. The primary emissions are nitrogen oxides, sulfur oxides, particulates, and volatile organic compounds. Sulfur oxides will not be present to any large degree. The amount of emissions will vary depending on the type of process fuel used (i.e., coal will emit more pollutants than will petroleum products). These emissions can be controlled using the same technologies used in conventional coal and oil combustion systems.

Water Impacts

Increased corn production for ethanol adversely impacts the quality of surface and ground waters and U.S. waterways. Water quality is degraded when eroded soil from the croplands is transported by water runoff into bodies of water. The sedimentation can fill reservoirs and navigation channels and obstruct drainage and irrigation ditches. Additionally, the deposition of soil causes algae blooms and introduces heavy metals and poisonous pesticides into waterways, thus reducing the recreational value of streams and lakes. Intensive farming and the associated need for more irrigation can adversely impact water supplies by depleting underground aquifers which have slow natural recharge rates.

TABLE IV-7
Ethanol From Corn

AIR IMPACTS												
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Ethanol From Corn	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Corn Production	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	N	N
Milling	N	N	N	N	N	NA	N	N	N	N	N	N
Transport-Diesel Power	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Conversion to Ethanol	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	N

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Ethanol From Corn	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Polut.	Other
Corn Production	Y	Y	N	Y	Y	Y	Y	N	N	N	Y
Milling	N	Y	N	N	N	N	Y	Y	N	N	Y
Transport-Diesel Power	Y	Y	N	N	N	N	N	N	N	N	Y
Conversion to Ethanol	Y	Y	N	N	N	N	Y	N	N	N	N

Wastewater is generated from ethanol conversion plants from the following four sources: 1) stillage from the distillation process; 2) washwater from fermenters and other plant equipment; 3) condensate return from evaporators, coolers, condensers, and other heat exchangers; and 4) boilers and cooling tower blowdown. These waste streams generated by ethanol conversion from corn do not contain toxic materials, but they are acidic, deplete oxygen levels, and cause odors and discoloration in the streams and rivers into which they run. Stillage discharges pose the greatest environmental problems of all of these wastewater discharges. For example, an ethanol plant producing 25 million gallons per year would generate roughly one million gallons of stillage per day. The biological oxygen demand that this stillage creates is equivalent to about 200 million gallons of municipal sewage. The total wastewater effluents from ethanol conversion will vary from one ethanol plant to another, depending on process configuration, extent of effluent recycling and treatment, and plant size. This impact on wastewater can be controlled by placing it in evaporation ponds, spreading it on agricultural fields, or processing it in conventional sewage treatment facilities.

During production at the ethanol conversion plant and subsequent storage, there is the possibility of spillage or leakage from the tank trucks or rail cars. In most cases an ethanol spill will not be as hazardous as a petroleum-based fuel spill. Ethanol, like other alcohols, has the beneficial properties of water solubility, biodegradability, and relative ease of evaporation. These inherent properties should allow the spill to quickly dilute to non-toxic concentrations, disperse downstream, and decompose if spilled into large bodies of water or evaporate if spilled onto land. The only scenario of any major concern would be if the ethanol was spilled very near a well containing drinking water supplies. Usually ethanol will tend to mix and to biodegrade quickly, but underground more restricted dilution conditions exist and biodegradation may not occur. In any case, ethanol contamination of drinking water supplies does not represent a serious health risk since the consumption of drinking water with low levels of ethanol will not be toxic.

Land Impacts

Increased corn production for additional ethanol used in gasohol will have a widespread impact on land use. More intensive use of lands for additional corn production will accelerate soil erosion. Even with conventional farming methods, soil is lost faster than new topsoil can form. Soil erosion can become a greater problem when crop residues are removed from the crop land. This exposes the soil to water and wind erosion and removes organic matter that otherwise would replace nutrients and eroded soil. Intensive farming exacerbates this situation because a much larger proportion of the total plant is harvested.

More extensive and intensive agricultural land use may disturb up to 50 percent (350 million acres) of current forest land. Besides pollution impacts, this has the potential for severe ecosystem impacts, such as the elimination of wildlife, the limitation of threatened and endangered species, and the elimination of specific system ecotypes.

The solid wastes generated from ethanol conversion have a far greater environmental impact than the air and water effluents that the process produces. The solid wastes degrade the environment by occupying large areas of land and by introducing materials that leach into groundwater and surface water supplies. These solid wastes are generated as sludge from wastewater, ash products from coal combustion or other process heat sources, and residue from air pollution treatment (scrubbers and dust from feedstock preparation.) These solid wastes are nontoxic. The only other land impacts associated with gasohol's fuel cycle will be the land requirements for storage facilities and the ethanol conversion plant.

Societal Impacts

More intensive corn cultivation would pose environmental impacts in terms of losses of wildlife-related recreation and other recreational facilities and the visual intrusion of acres of a monoculture.

Conclusion

The production of ethanol used as a blending component in gasoline will result in adverse environmental impacts. Bioconversion plants generate more regulated pollutants per unit of energy output than any other fuel production process mentioned in this study. The production of ethanol produces no net increase in greenhouse gases. Nevertheless, the emissions of NO_x will have negative impacts on stratospheric ozone. Both water runoff from corn production and spills and leaks of wastewater produced at ethanol conversion plants contribute to water quality degradation. Increased corn production for additional ethanol will have widespread, adverse impacts on the land in terms of soil erosion, loss of wildlife habitat, and the depletion of soil quality. The nontoxic solid wastes produced during ethanol conversion degrade the environment by occupying large areas of land and by introducing materials that leach into groundwater and surface water supplies. Additionally, the creation of energy farms would pose environmental impacts in terms of wildlife and recreational facility losses and visual intrusions.

Compressed Natural Gas

Domestically produced natural gas can be compressed and used as a substitute for gasoline in passenger vehicles. The environmental impacts of natural gas for passenger care use are the same as natural gas for other uses from a production and transportation perspective. These impacts are summarized in Table IV-9 in the section discussing domestic on-shore production. As with the other alternatives, consumption related impacts are not considered here but are discussed in the Background Report.

Electric Vehicles

The environmental impacts associated with electricity as a gasoline substitute are dependent upon the primary energy source used to produce the electricity. These impacts are considered in detail in the subsequent natural gas section. The only other impacts associated with electric vehicles are due to consumption. These impacts are not considered here, but are analyzed in the Background Report.

OIL CONSERVATION ALTERNATIVES

Oil conservation can reduce environmental pollution. Conservation alternatives are examined for the transportation and industrial sectors.

Increased Fuel Economy/Diesel Engines/Public Transport

Conservation of oil in the vehicle can take many forms. One option is increasing fuel efficiency in conventional gasoline-powered vehicles. This can be done by implementing new technologies that allow a vehicle to operate more efficiently with no loss in performance or size. Other options include driving smaller and lighter cars, driving at slower speeds, replacing gasoline engines with diesel engines, and using public transportation more frequently, especially to and from work. Of these "other" options, the first three translate into increasing fuel economy. A diesel engine's combination of an inherently better cycle efficiency, improved consumption at low load, lack of throttling losses, and its use of a higher compression ratio, give it an improved fuel economy compared to the gasoline engine. Given that diesel fuel is one of the many products of crude oil, if diesel substitutes for gasoline, less oil is needed to travel the same distance. The fourth option, public transit, is a means of reducing the miles travelled in private vehicles.

All of the options just mentioned mean a reduced need for oil because if vehicles are more efficient or are used less often, they do not need to be refilled as often. A decrease in gasoline being delivered to the service station, translates into a reduced demand by the transportation sector for barrels of oil.

In assessing the net environmental impacts of these means of oil conservation, as shown in Table IV-8, it was assumed that barrels of oil forgone would have zero environmental impacts for production and transportation. Water and land impacts or solid wastes would be zero. Thus, the net impacts on the environment from oil conservation, proposed by these alternatives, tend to be highly positive.

Conclusion

Conservation of oil in the vehicle can take many forms. One option is increasing fuel efficiency in conventional gasoline-powered vehicles by implementing new technologies that allow a vehicle to operate more efficiently with no loss in performance or size. Other measures include driving smaller and lighter cars, driving at slower speeds, replacing gasoline engines with diesel engines, and using public transportation more frequently. All of these measures are believed to have positive net impacts on the environment in that they mean a reduced need for oil. More efficient vehicles use less energy. A decrease in gasoline being delivered to the service station translates into a reduced demand by the transportation sector for barrels of oil. These barrels of oil forgone would have zero net impacts for production and transportation. Water and land impacts, in addition to solid wastes, would be zero. Thus, the impacts on the environment from oil conservation, through these alternatives, tend to be highly positive from a supply standpoint, though the alternatives do have some negative impacts if end-use is also considered.

Reduced Consumption of Plastics

Within the industrial sector, oil's main use in the post-2000 period will be as a feedstock. Although liquified petroleum gases (LPGs) and coal tar can be used as petrochemical industry feedstocks, the main feedstock is natural gas liquids (NGLs). In practice, NGLs are more likely to come from natural gas production than from crude oil. Convention has dictated over time that NGLs, whether the heavier pentanes from lease condensate or the higher ethane and propane from

TABLE IV-8
Conservation of Oil

AIR IMPACTS												
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Conservation of Oil	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	(VOC+ NO_x)	(NO_x)		
Offshore Extract/Product.	N	N	N	N	N	N	N	N	N	N	N	N
Transport												
Pipeline	N	N	N	N	N	N	N	N	N	N	N	N
Tanker	N	N	N	N	N	N	N	N	N	N	N	N

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Conservation of Oil	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Polut.	Other
Offshore Extract/Product.	N	N	N	N	N	N	N	N	N	N	N
Transport											
Pipeline	N	N	N	N	N	N	N	N	N	N	N
Tanker	N	N	N	N	N	N	N	N	N	N	N

natural gas processing plants, be considered a form of oil. Thus, the discussion of feedstocks has been left in the oil section.

A major end use category for petrochemicals is plastics. Because petroleum hydrocarbons are the major feedstocks for plastics the reduced consumption of plastics is an energy alternative to OCS oil (or NGL) production.

To reduce consumption of petroleum by reducing plastic feedstock consumption, an alternative must be found for the end use product made from the plastic resin. In most cases, the easiest alternative is to make the final product from a different material. One example would be less use of plastic in an automobile through the substitution of steel, but this substitution could lead to greater energy consumption. Additional steel would require additional coal with all of its attendant environmental impacts. Additionally, if metal is substituted into an automobile, the extra weight will make it less fuel-efficient, raising its gasoline use. This increased demand for gasoline would increase environmental impacts from oil production and transportation whether the crude oil was OCS-produced or imported oil. As seen from this example, reduced use of plastic products in the vehicle may not reduce oil use. This effect will most likely be true for many alternatives to a plastic product. Although impacts associated with plastic production will be decreased if an alternative is implemented, there will always be other impacts associated with the substitute's production and use.

The major problem with assessing the environmental effects of the reduced use of plastics is that there is no one product that makes up a large part of overall plastic consumption. There are literally hundreds of thousands of plastic products. Analysis of a sufficient number of these products, which would significantly reduce OCS oil production, is very complicated and beyond the scope of this study.

Conclusion

Because plastic products are manufactured using petroleum feedstocks, reduced consumption of plastics is an alternative to OCS oil or NGL production. By substituting other end products for plastic products, the impacts associated with plastics production will be decreased. However, there will be other impacts associated with the substitutes' production and use.

SUPPLY SUBSTITUTION ALTERNATIVES TO OCS NATURAL GAS

There are two major energy alternatives that are direct supply substitutes for OCS natural gas. One is increased production of domestic onshore natural gas; the other is increased natural gas imports in the form of LNG.

Increased Onshore Domestic Natural Gas

Over the next ten years, tight sands gas and coalbed methane reserves have the potential to contribute substantially to the U.S. supply of natural gas. Methane gas from coal seams has an excellent chance for development and is already successfully marketed from several areas. Total reserves in the U.S. are estimated to range between 80 and 400 Tcf. Thirteen western tight gas basins have been identified and are estimated to contain in excess of 400 Tcf of nonassociated gas in place.

The development of a tight gas well is the same as that of a conventional non-associated gas well with the exception being the well completion stage where the well is treated to increase the effective surface area through which the gas enters the well bore. Because tight sands formations are characterized by low permeability, the formation must first be fractured with a predetermined volume of fluid at an acceptable rate and pressure, creating a more permeable gas well and thus enhancing recovery. There are three general classes of fracturing agents- water-base, oil-base, and acid-base. However, over 80% of fracturing projects currently use water-based systems. In order to keep the hydraulically-induced fractures open, proponents are induced, usually sand, glass beads, or bauxite. These fracturing procedures only take a matter of hours and the impacts associated with fracturing will result in only a small increase in the risk to the environment over conventional gas production.

The coalbed methane method entails drilling the well into a buried coal seam, and then producing the methane, or natural gas, from the coal. Releasing the methane absorbed in the coal is accomplished by lowering the pressure on the coal, which generally involves removing the water and lowering the hydrostatic pressure on the coal seam. Hydraulic fracturing provides an effective means of doing this and, thus, initiates gas production.

Both coalbed methane and tight sands gas recovery procedures will produce essentially the same environmental impacts as conventional production procedures. However, there will be differences in the quantity and quality of emissions and effluents due to differences in formation type and recovery technologies, such as hydraulic fracturing. Thus, in discussing the environmental impacts of coalbed methane and tight sand gas, the impacts that generally apply to all natural gas production activities will be discussed along with those that are specific to each unconventional recovery method and reserve.

In general, natural gas production activities will impact air, water, and land. Table IV-9 summarizes the likely impacts of increased production and pipeline transport.

Air Impacts

The potential for air pollution from the exploration, drilling, and production of incremental onshore natural gas is small. However, there will be some emissions of SO_x, NO_x, CO, particulates, VOCs, and aldehydes attributable to the exhaust from diesel and gas-fueled support equipment and to leaks from accessory equipment such as valves, fittings, connections, tanks, and pits. Emissions vary with the size of the engines used, formation type, depth of the well, and intensity of drilling operations.

The emissions of regulated pollutants, especially NO_x, SO_x, and VOCs, from production activities could potentially impact acid rain and tropospheric ozone formation. Additionally, emissions of NO_x could likely have adverse impacts on stratospheric ozone. Greenhouse gases, especially CO_2 and methane, are also generated from these activities. Both the tight sands and coalbed methane production procedures will produce significant quantities of CO_2 and methane from the venting and flaring of the natural gas during excavation and initial production. Later, however, these gases will be collected for use, resulting in an overall decrease in greenhouse gas emissions. The quantifiable global warming data associated with natural gas production and transportation is shown at the end of the Chapter in Table IV-3.

TABLE IV-9
Increased Onshore Domestic Natural Gas

AIR IMPACTS												
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Onshore Natural Gas	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Onshore Extract/Product.	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y
Transport-Pipeline	N	Y	N	Y	Y	NA	N	Y	Y	Y	Y	Y

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Onshore Natural Gas	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands*	Nontoxic	Toxics	Radioact Waste	Scenic Point.	Other
Onshore Extraction/Product	Y	Y	N	Y	Y	Y	Y	N	N	Y	Y
Transport-Pipeline	N	N	N	N	N	N	N	N	N	N	N

* Site specific.

Noise pollution will also be produced from these production activities. Heavy-duty exploratory vehicles, associated human involvement, and seismic exploration utilizing explosives, thumpers, and vibrators will create loud and sometimes sudden noises.

Pipeline transport of the gas from the well will produce NO_x, CO_2, and VOCs emissions by virtue of the fuel used to run the compressors and pumps. These emissions will adversely impact acid rain and ozone formation, as well as contribute to greenhouse gases. Pipeline leaks do not usually constitute a problem since natural gas can diffuse and disperse very rapidly through the atmosphere such that its local concentration is negligibly low.

Water Impacts

As shown in Table IV-9, extraction and production of domestic natural gas could produce environmental impacts for both surface and groundwater. During excavation, drilling fluids or "muds" are produced along with associated fluid wastes such as contaminated rainwater, drilling rig washdown water, drill cuttings washdown water, and sanitary wastes. However, due to strict federal containment laws and discharge limitations, these potential contaminants of surface water and groundwater are well-controlled and, therefore, have short-lived environmental impacts.

The primary waste of onshore gas production is "produced water" that exists naturally in oil and gas formations. It contains oil, salts, trace heavy metals, solids, and organic chemicals. Excess and contaminated drilling fluids, used to clean away debris ahead of the bit, are removed at the surface along with the "produced water" and pumped into holding ponds. Impermeable linings are used in holding ponds to guard against infiltration of fresh water aquifers by contaminated liquids. Still groundwater and surface water contamination may occur during transport to the holding ponds from leaks.

The quantities and qualities of "produced waters" from coalbeds are influenced by the type and depth of the producing coal seams. These waters are slightly to moderately saline with high concentrations of chloride, iron, and other associated inorganic constituents. Two methods are currently being used to dispose of the water: land application or stream discharge. Direct land application occurs when the water has a concentration of less than 2,000 ppm of total dissolved solids (TDS). The water runs through a pipeline to an area of vegetation and is distributed by a sprinkler system. If the water does not meet this criterium, it is discharged into settling ponds to be aerated or diluted. The water may also be released into streams if it does not lower the water quality downstream. Long-term monitoring of associated streams has indicated that the released water will have no impact on invertebrates or fish communities. Thus, the environmental impacts are short-lived and minimal.

The major environmental concerns with tight sands gas and coalbed methane recovery using hydraulic fracturing are the potential contamination or disruption of aquifers from the permanent injection of fracturing fluids into aquifers or from leaks into additional aquifers and the surrounding strata. Aquifer contamination is more of a concern with tight sands due to the abundance of aquifers surrounding the formations. Currently, however, the "used" fracturing fluids are disposed of in open pits. The same impermeable linings, used to prevent the loss of drilling fluids, are also used for these storage pits. However, there could still be potential leaking of these non-toxic fracture fluids into groundwater.

In general, ground water may also be contaminated in the instances of blowouts, leaks, or upon abandonment of the producing field. Batteries, tanks, sumps, and pipelines may deteriorate and release pollutants into adjacent surface and ground waters.

Land Impacts

Before any drilling activities ensue, access must be gained to the site and site preparation must occur to ready the location for drilling activities. Typically, three acres of land are cleared, graded and leveled for drilling deep wells. Then holding ponds are dug and diked for the disposal of circulation fluids (muds), cuttings, and other waste materials produced during excavation and production activities. Provisions must also be made for supplying the large quantities of water necessary for drilling procedures. If water is not already available on site, pumps and water lines are installed, or water wells are drilled. These preparatory activities are applicable to both tight sands and coalbed methane recovery.

The land impacts from these preparatory activities are not readily quantifiable. These activities clearly cause some disruption of ecosystems. Off-road vehicles, drilling of test wells, etc. cause soil particles to become unconsolidated and increase the soil's susceptibility to wind and water erosion. These activities and various accidents can cause long range impacts on soil stability and vegetative cover. Additionally, surface and water drainage problems may occur as top soil and foliage are removed, and depending on where the gas fields are sited, natural wetlands could be damaged.

During drilling, large volumes of formation solids, more commonly called drill cuttings, are recovered from the well and brought to the surface by the drilling mud. Once out of the ground, the cuttings are separated from the mud and discharged into a waste pit. These drill cuttings are the only solid wastes produced during gas production.

Societal Impacts

Domestic onshore gas production activities will also adversely affect the scenic environment to the same degree as onshore oil production activities will. These activities lead to losses of natural vegetation and erosion of pristine land areas.

Workers are more at risk when tight sands and coalbed methane production procedures are implemented, compared to conventional natural gas production, due to the necessary mixing and handling of the various toxic chemicals added to the fracturing fluid.

Conclusion

The environmental impacts that result from producing the unconventional reserves of natural gas from tight sands and coalbed formations will only be a small increase in the risk to the environment over conventional gas production. As with conventional production, there will be emissions of noise and regulated pollutants from diesel and gas-fueled support equipment, compressor engines, and fugitive leaks from accessory equipment. Emissions of SO_x, NO_x, and VOCs could potentially impact acid rain and tropospheric ozone formation. Additionally, the emissions of NO_x could have negative impacts on stratospheric ozone. There will also be emissions of greenhouse gases, especially methane and CO_2, but these quantities will be less than those generated from conventional production activities. The primary wastes of onshore gas production are "produced water" that exists naturally in oil and gas formations and drilling fluids. The major environmental water quality concerns with tight sands gas and coalbed methane recovery using hydraulic fracturing are the potential contamination or disruption of aquifers in the case of permanent injection of toxic fracturing fluids in the aquifers. Conventional land preparatory activities adversely affect ecosystems, soil, wildlife, and possibly wetlands depending on where the wells are located. The major societal impacts are risks to workers from handling the toxic chemicals added to the fracturing fluid.

Increased LNG Imports

The production and liquefaction of natural gas has environmental impacts, but these impacts, except for the global warming impact, will be in the countries in which the natural gas is produced and subsequently liquified. Since this study is limited to analyzing those impacts that affect the United States, it begins considering the fuel cycle impacts of imported liquified natural gas (LNG) from the point at which the tanker transporting the fuel enters United States waters. The analysis ends when the imported LNG is landed in the United States. The environmental impacts associated with LNG tanker transport and unloading activities are shown in Table IV-10.

Air Impacts

Air emissions associated with normal tanker transport of liquid fuels are generated by three aspects of the operation: the combustion of fuel during transport, the use of auxiliary power at dockside, and from the cargo itself. LNG tankers are specially designed cryogenic tankers. Because of the possibility of catastrophic explosions that might result from leaks or punctured carrying tanks, the LNG tankers are built to withstand almost any contingency. First of all, the tanks are independent and insulated from the hull of the ship, and second of all, a membrane tank is utilized in which the ship's hull serves as the outer tank wall. The inside of the hull is insulated, and a thin membrane covering the insulation serves as a liquid barrier giving an LNG tanker essentially three skins. This membrane tank system guards against potential leaks and vaporization of LNG.

During conventional tanker transport, regulated pollutants and toxics are emitted from the tanker's smokestacks by virtue of the fuels that it burns to power itself. However, because an LNG tanker uses natural gas, a cleaner fuel than the Bunker C commonly used in other tankers, and has a more efficient fuel combustion system, the amount of associated emissions will be very low. If marine diesel is used in a backup situation, the associated emissions will still usually be less than in a conventional tanker due to the combustion characteristics of the fuel.

In addition to the residuals emitted during overseas transport, there will also be air emissions at dockside. For operational purposes, power must be made available for lighting, heating, pumps, refrigeration, etc. Some LNG tankers will use a diesel-powered auxiliary system, while the majority operate on one or more main boilers. The quality and amounts of emissions produced will depend on both the amount and type of fuel consumed.

Separate from the emissions produced at dockside by normal tanker operations are those emitted by the cargo during unloading processes. However, LNG unloading operations are different from normal oil processes. For unloading either at a dock or through a pipeline, LNG ships connect to liquid unloading arms and the LNG is moved from the ships to stainless steel or aluminum storage tanks. During unloading, LNG becomes vaporized. Any leakage would be a concern because the

TABLE IV-10
Increased LNG Imports

	AIR IMPACTS											
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
LNG from Foreign NG	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Offshore Extract/Product.												
Transport												
Pipeline												
Tanker	Y	Y	Y	Y	Y	NA	N	Y	Y	Y	Y	Y

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
LNG from Foreign NG	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Polut.	Other
Offshore Extraction											
Transport											
Pipeline											
Tanker	N	N	Y*	Y**	Y**	Y**	N	N	N	Y**	Y

* Normal tanker fuel used during transport is LNG boiloff. However, marine diesel is used as backup transport fuel and is used during docking for loading and unloading operations.

** Only if new terminals are required.

very cold gas would not disperse quickly and the vapor clouds will persist near ground level. If these clouds were ignited, they would have tremendous explosive power, capable of devastating large areas by explosions and fires. However, leaks rarely occur. The only significant emissions result from the use of cargo pumps and inert gas generators. The emissions will typically be regulated pollutants. Tanker transport and unloading activities add to noise pollution.

Greenhouse gases will also be emitted during tanker transport and unloading activities. The amount of emissions and the subsequent global warming impact is unknown because sufficient information is not available.

Water Impacts

There is a chance that an LNG spill may occur while the LNG tanker is in U. S. waters or at port. Although this occurrence is not likely due to the specially designed membrane system and special precautions taken during unloading, if a spill did occur the impacts would be minor and short-lived because LNG vaporizes quickly.

Land Impacts

The only impacts to land that could occur with LNG transport and unloading operations are the additional unloading and storage terminals that would have to be built to facilitate an increased supply. Construction of these facilities could denude the area of vegetation and displace wildlife.

Societal Impacts

There has been some concern in the U.S. (and elsewhere) that LNG terminals and ships are a serious threat to public safety since the fuel is readily explosive in the event of leaks or punctured carrying tanks. Consequently, the trend has been to build the terminals at some distance from population centers. However, the likelihood of such large leaks and the possibility that a LNG vapor cloud would be ignited and cause damage are minimal. Large LNG terminals have been operating around the would for several decades without major mishaps.

Conclusion

The only major environmental impact associated with expanded LNG use would be in the case of LNG carrying tank punctures or leaks during unloading or use. Because LNG readily vaporizes, but does not disperse quickly and remains near ground level, accidental ignition of the vapor clouds would have tremendous explosive power. Regulated pollutant emissions during transport and unloading are not a significant problem due to the ships' special combustion system, the use of natural gas, and the special unloading process.

Reduced Gas Consumption in Electricity Generation

OCS natural gas is used in power plants for electricity generation. A reduced need for OCS gas could arise either from switching (i.e. fuel substitution) or from reduced consumption due to electricity conservation.

One major assumption was made in this section of the report. Primary fuel production and preparation involves the consumption of electricity whether to move rail cars in underground coal mines or to enrich uranium. The electricity may be self-generated or it may come from several different external plants all using different fuels and all producing different impacts on the environment. To simplify matters, ICF did not include the impacts of the generation of electricity in the discussion of each energy alternative.

Coal

As shown in Table IV-11, surface mining, coal beneficiation, and transport will produce regulated pollutants. Most of these processes will also produce emissions of aldehydes and greenhouse gases and may impact both tropospheric ozone and acid rain formation and stratospheric ozone. There is a great potential for water and land impacts from activities at the mines due to their production of toxic and non-toxic water and solid wastes. The potential impacts on air, land, and water quality from these produced effluents will vary by region, and depending on the specific characteristics of the mine. The general emissions produced, indicated in Table IV-11, and their potential impacts, will be discussed in detail below.

Air Impacts

Air pollutants from surface mining operations originate from diesel-fueled support equipment and wind erosion. Both wind and diesel exhaust produce particulate emissions. The combustion of diesel fuel generates emissions of SO_x, NO_x, particulates, hydrocarbons, and CO, in addition to aldehydes. The direct air emissions associated with underground mining are negligible due to the use of electric-powered support equipment, although, of course, air pollution is created in the process of producing the electricity. Coal processing, usually done onsite, contributes regulated pollutants and aldehydes to the atmosphere.

Transportation of the coal to the utility plant causes ambient air quality deterioration, resulting from loading and unloading operations and from actual transport due to the use of diesel-powered transport vehicles. Rail, barge, and truck transport contribute significantly to fugitive particulate emissions. Although these emissions can be somewhat controlled in truck and barge transport, they are significant for rail transport due to the practice of carrying loads uncovered. The magnitude of regulated pollutants and aldehydes emitted as combustion products of diesel-fueled engines will depend on haul distances.

Contributions to acid rain formation occur due to the emissions of NO_x and SO_x from the diesel-burning support and transport equipment. Tropospheric ozone-formation is dependent on a series of photochemical reactions between reactive hydrocarbons and nitrogen dioxide. Although NO_x is emitted as an exhaust product during coal production and transport, reactive hydrocarbons emitted during those same stages are negligible.

Air pollutants in the form of noise are generated from the use of blasting equipment during mining activities. The noise, depending on its intensity, may detrimentally affect neighboring communities.

TABLE IV-11
Coal

AIR IMPACTS												
	Regulated Pollutants					**Toxics**		**Acid Rain**	**Ozone**		**Green-house Gases**	**Noise**
									Trop.	**Strat.**		
Coal	**SO_x**	**NO_x**	**Part.**	**CO**	**VOC**	**BTX**	**Aldehyd**	**(SO_x+NO_x)**	**($VOC+NO_x$)**	**(NO_x)**		
Production												
Surface Mining	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Underground Mining	N	N	N	N	N	N	N	N	N	N	N	Y
Transport From Mine	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Coal	**Ground water**	**Surface Water**	**Ocean**	**Erosion/ Vegetat**	**Wildlife**	**Wetlands**	**Nontoxic**	**Toxics**	**Radioact Waste**	**Scenic Polut.**	**Other**
Production											
Surface Mining	Y	Y	N	Y	Y	N*	Y	Y	N	Y	Y
Underground Mining	Y	Y	N	Y	N	N*	Y	Y	N	Y	Y
Transport From Mine	Y	Y	N	N	N	N	N	N	N	N	N

* Depends on the site.

Water Impacts

Mining activities are well-recognized for their degradation of water quality. Acid mine drainage, sediment loads, and mine water runoff, which may contain toxic trace substances, contribute to the deterioration of stream quality and the degradation or elimination of aquatic life. Erosion of exposed soils, waste piles, and coal storage piles by wind or precipitation all contribute significant amounts of these hazardous substances to surface water. Drainage from mines may be controlled at the source through treatment processes. These include the use of evaporation ponds, alkaline regrading, controlled-release holding ponds, connector wells, and slurry trenching.

Groundwater may be contaminated by either its natural movement into underground mine openings or by the infiltration of toxic surface water through boreholes drilled during exploration. Water from surface mines may also penetrate the soil and enter the groundwater system. Barge transport is the only mode of transport that may cause the degradation of water quality, but only in the case of accidental discharges of coal.

Land Impacts

As indicated in Table IV-11, surface mining can produce far-reaching land impacts. The significance and intensity of these impacts will vary from mine to mine depending on local variations in topography, geology, hydrology, climate, and land-use planning. The most obvious land-use impact associated with surface mining is the removal or alteration of the coal bed, as well as the destruction of any geological formations overlying the coal. Surface mining completely eliminates existing vegetation, destroys the genetic soil profile, and displaces or destroys wildlife and habitat. Without diligent reclamation of the land through backfilling, topsoil replacement, and revegetation, the general topography of the land may be permanently changed and left unsuitable for other uses.

Underground mining potentially causes subsidence. Depending on the degree of extraction, subsidence may occur immediately or at some future time. Subsidence can disrupt aquifers, damage surface facilities, and trigger mud slides or rock falls.

The amount of waste produced during coal mining varies considerably depending on the method of coal extraction (surface or subsurface mining) and the specific techniques used. Surface mining generates wastes in the amount of 100 tons per day per 10,000 tons of coal per day produced. Solid wastes from underground mining, produced with the sinking of the initial shaft, are not large (about 3,000 tons). The treatment facilities associated with both types of mining will contribute considerable amounts of sludge to the total mine wastes when water pollutants from mine-related activities are converted into solid wastes. As indicated in Table IV-11, the solid wastes generated from mining activities can be both toxic and non-toxic.

Societal Impacts

Because the land is denuded of vegetation and lined with piles of overburden and spoil, surface mining has adverse aesthetic impacts.

Workers are at an occupational risk while mining for coal. Workers are exposed to noise, solvents, coal dust, and potential mutagens and carcinogens such as polycyclic aromatic hydrocarbons.

Conclusion

The major environmental impacts of expanded coal use include: deterioration of ambient air quality from emissions of regulated pollutants, aldehydes, and toxics from surface mining activities; noise from mining activities; the elimination of vegetation and displacement or destruction of wildlife and habitat associated with surface mining; deterioration of water quality and possible elimination of aquatic life from acid mine drainage and mine water runoff which may contain toxic trace substances; the problem of disposal of solid wastes produced during mining; the visual intrusions on the land from surface mining residuals; and occupational hazards and risks to workers from exposure to noise, solvents, coal dust, and potential mutagens and carcinogens, such as polycyclic aromatic hydrocarbons.

Nuclear Power

The raw material used in conventional light-water reactors is uranium-235, a fissionable isotope obtained from uranium ore. The ore must be mined, milled, and enriched before it can be used as a fuel. As seen in Table IV-12, uranium mining, processing, and transportation will impact air, water, and land and will generate solid wastes. Like any mining operation, uranium mining will produce significant land impacts and may affect groundwater and surface water quality.

However, the most significant impacts associated with the nuclear fuel cycle result from releases of radioactive elements. All stages of the fuel cycle discharge radioactive elements and wastes into the air and water and onto the land, producing detrimental environmental and health problems.

Air Impacts

The air pollutants emitted during uranium mining are generally the same as those emitted from coal mining. Regulated pollutants such as SO_x, NO_x, CO, particulates, and hydrocarbons, including toxic aldehydes, will be emitted from the operation of diesel-powered mining machinery. However, uranium mining will also produce effluents of radioactive substances, such as radon and radon daughters, which occur naturally as decay products of uranium. The level of these impacts will vary depending on location. Additionally, noise from blasting equipment may affect neighboring communities.

The gaseous effluents released to the atmosphere from milling operations will be regulated pollutants, aldehydes, organic acids, and carbon dioxide. These emissions result from the combustion of coal and natural gas for power and heat. There are also radioactive effluents (radon and radon daughters) from the milling operation, but these are low-level and are not considered health problems.

Uranium hexafluoride production, which converts the uranium in the yellowcakes to a gaseous compound (UF6), will produce emissions of gaseous fluoride. However, measurements of fluoride concentrations in the vicinity of the plant have indicated levels below those estimated as deleterious to humans or grazing animals. Other emissions of sulfur oxides and carbon monoxide will result from the combustion of coal used to provide heat at the plant. The demand for electricity at the uranium hexafluoride production plant may indirectly result in increased emissions in the electrical generation sector.

TABLE IV-12
Nuclear Power

	AIR IMPACTS											
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Nuclear Power	SO$_x$	NO$_x$	Part.	CO	VOC	BTX	Aldehyd	(SO$_x$+NO$_x$)	(VOC+NO$_x$)	(NO$_x$)		
Open-Pit Mining	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Total Processing												
Uranium Milling	Y*	Y*	Y*	Y*	Y*	NA	N	Y*	Y*	Y*	Y*	N
Uran. Hexaflouride Conv.	Y*	Y*	Y*	Y*	Y*	NA	N	Y*	Y*	Y*	Y*	N
Uranium Enrichment	Y*	Y*	Y*	Y*	Y*	NA	N	Y*	Y*	Y*	Y*	N
Fuel Fabrication Plant	Y*	Y*	Y*	Y*	Y*	NA	N	Y*	Y*	Y*	Y*	N
Transport-Diesel Power	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

* Indirect, not directly from the nuclear fuel cycle.

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Nuclear Power	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste*	Scenic Polut.	Other
Open-Pit Mining	Y	Y	N	Y	Y	N	Y	N	Y	Y	Y
Total Processing											
Uranium Milling	N	Y	N	N	N	N	Y	N	Y	N	Y
Uranium Hexaflouride Conv.	N	Y	N	N	N	N	Y	Y	Y	N	Y
Uranium Enrichment	N	N	N	N	N	N	N	N	Y	N	Y
Fuel Fabrication Plant	N	Y	N	N	N	N	Y	N	Y	N	Y
Transport-Diesel Power	N	N	N	N	N	N	N	N	Y	N	Y

* Includes radiation exposure.

Uranium enrichment, the process by which the percentage of the desired fissile fuel (U-235) is increased, does not produce any significant air impacts. Waste heat is released to the atmosphere via cooling towers. Major air impacts will only occur in the case of accidents, such as fires and explosions, that could release gaseous and liquid chemicals into the atmosphere. However, these accidental impacts, as well as others from normal operations are only felt in the locality of the uranium enrichment plant. Fuel fabrication plants that convert the enriched UF6 into a fuel product for reactors have very few air impacts.

The largest quantities of radioactive air emissions are produced during fuel reprocessing. This step reduces the total residuals associated with mining, milling, and conversion to UF6 because the recovered uranium replaces uranium that otherwise must be supplied by these processes, but the quantity of high-level wastes produced in reprocessing is large in comparison with the other steps. Reprocessing emits tritium, krypton-85, iodines, fission products, and transuranics into the atmosphere.

The transport of the uranium to the nuclear power plant can result in radiation exposure to handlers, truck drivers, and onlookers. Although many safety precautions are taken to insure that criticality cannot occur under any conditions, including accidents and leaks which release significant quantities of radioactivity to the environment, it may still occur.

Although no information could be found that quantified the greenhouse gas emissions for the nuclear fuel cycle, it is assumed that the emissions will come from the combustion of process fuels during mining, and processing activities. However, since these emissions will only be secondary in the nuclear cycle, nuclear's global warming impact would be much less than that of fossil fuel.

Water Impacts

Deterioration of surface water and groundwater can occur from uranium mining activities when water used in the mining process is discharged to the ground. The suspended solids can enter local water supplies unless control procedures such as settling ponds are used. Another likely effect is the lowering of the local water table. However, once mining has ceased, water levels usually return to former levels.

The primary water wastes produced in association with milling operations are liquid tailings. These residuals, which contain considerable amounts of low-level radium wastes, are discharged into tailing ponds. Leachates from mill tailings may resurface and occupy land that may be used by wildlife or people.

Three radioactive materials - uranium, radium-226, and thorium-230 are produced as liquid residuals in UF6 production. These residuals are usually released to the river near the plant. However, the concentration levels of these radioactive materials are usually those specified by Federal regulations.

The fuel fabrication plant produces liquid effluents of NO_3 and ammonia and a radioactive residual, thorium-234. These pollutants are discharged to holding ponds. The amount of thorium-234 released is so small that it does not present any known health problems.

Land Impacts

Uranium mining, like coal mining, denudes the land of vegetation and produces solid wastes of overburden or waste rock taken from the mine. Typical yellow-cake milling will produce significant quantities of solid tailings. The radium content is minimal and thus, does not present a health problem. Sludge is produced as a residual from the wet and dry processes of UF6 production. Liquid residuals from the wet processes are impounded and the resulting sludge is usually buried. Solid wastes from the dry processes are radioactive and also require burial.

Societal Impacts

Uranium mining activities adversely affect the aesthetics of the land making it an eyesore to immediate populations.

The public's primary concern about the expanded use of nuclear energy is the risk of exposure to the radioactivity produced during all nuclear fuel cycle activities. Exposure to radiation can be fatal, or it can cause exposed cells to malfunction, later resulting in possible cancer, cataracts, prenatal abnormalities, and non-specific shortening of the life-span. An additional public fear is that nuclear power expansion could contribute to nuclear weapons proliferation.

Conclusion

The major environmental impacts associated with an expanded use of nuclear energy include: potential releases of small amounts of radiation during mining, processing and the use of radioactive materials; surface water and groundwater deterioration from the disposal of low-level radioactive wastes and considerable public anxiety about radiation.

Residual Fuel Oil

Another energy alternative to OCS gas is residual fuel oil. Residual fuel oil is a heavy petroleum product that remains after the more valuable petroleum products, such as naphtha and gasoline, have been distilled from crude oil. The United States both produces residual fuel oil and imports it. On the margin, the additional residual fuel needed to replace OCS gas would be imported. Since residual fuel oil is normally imported, incremental imports may exacerbate any potential environmental impacts, but they will not create new problems. Consequently, the environmental impacts of importing and then distributing residual fuel oil within the United States are considered to be similar to those arising from imported crude oil (see Table IV-5 and accompanying text).

Renewable Energy Sources

In general, renewable energy resources are often considered to be environmentally benign by comparison with most "conventional" energy resources like fossil fuels, which are not renewable. The term renewable refers to energy flows which are continuously generated and are of a physical nature rather than of a chemical nature as fossil fuels are. Although these energy flows are continuously generated they are not always available; i.e., the sun continuously generates radiant energy, but due to the rotation of the earth, cloud cover, etc., the energy is not always available. Most of these renewable energy sources have been utilized in the past, though past applications were often rudimentary and on a small scale. Currently, however, these sources are being developed commercially on the large-scale to deliver energy in the form of electricity or heat.

The total environmental impacts of the renewable energy source will depend on the technologies used, the scale of operation, and the geographical distribution of the systems. Because the energy sources are physical in nature rather than chemical, they will have primarily physical environmental impacts. Although many technologies utilizing renewable energy are available, such as biomass energy crop conversion, wave energy systems, ocean thermal energy conversion systems, and various unconventional geothermal systems, this study was limited to the environmental impact analysis of wind power systems, active solar thermal power systems, photovoltaic power systems, and hydropower systems (see Chapter III).

Wind Energy Systems

Wind turbines are used to convert wind into useful mechanical or electrical energy. Almost all turbines are erected in clusters called "wind farms." As indicated in Table IV-13, there are few negative environmental impacts associated with wind farms compared to fossil energy use.

Wind turbines are a very capital-intensive technology, which are constructed principally from steel. Production of steel has significant environmental impacts, although the amount of steel required per turbine is relatively small.

Air Impacts

Although wind turbine construction, operation, and maintenance activities do not produce any significant amounts of pollutants, these activities do produce noise. Noise impacts can result from the construction of the wind turbines by earth moving equipment and increased traffic on local roads and highways. Noise would also be generated from the operation of the gearbox, the generator, and from the aerodynamic effects of the wind turbine blades. The turbine blades would produce the most noise. This low frequency noise can be heard at distances up to two kilometers. The other noise sources would generally only be discernable in the near-field of the wind turbine.

Land Impacts

The use of wind power, on a large scale, would have negative impacts on land use. The turbines of a reference wind farm would be distributed over an area of anywhere from 300 to 2,000 acres, depending on topography, prevailing wind direction, the shape and orientation of the property on which the farm is located, and the size of the turbines being used. Thus, a wind farm can use a considerable amount of land. The construction, installation and operation of the farms also produces adverse land impacts from support activities such as road building (at least one road must be built to service each individual turbine), the development of electric feeder and transmission lines, and the construction and maintenance of substations. These activities upset the topography and surface characteristics of the land and may lead to water erosion from flash floods if the wind farms are sited in an arid environment. Development of localized desert environments could occur as a result of

TABLE IV-13
Wind Energy Power Systems

AIR IMPACTS											
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Electricity From Wind Power	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Turbine Site	N	N	N	N	N	N	N	N	N	N	N	Y

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Electricity From Wind Power	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Pollut.	Other
Turbine Site	N	N	N	Y	Y	Y*	N	N	N	Y	Y

* Site specific.

construction. This could result in a worsening of flood erosion hazards and downstream sediment deposition. Changes in natural drainage courses could also increase erosion.

Besides these direct impacts on the land, wind farm activities also adversely affect biological resources. Wildlife activity would decrease significantly in the immediate construction area or facility site, and animal territories near the development may be temporarily deserted. If associated long-term indirect impacts are high, the vicinity of the developed area may be permanently abandoned. This could lead to long-term cumulative habitat deterioration. Placement of large turbines along ridge tops may impact the behavior of large soaring birds, and there may be incidences of collision between birds and wind turbine generators.

Societal Impacts

Although wind farms are considered a "clean" electrical power generation alternative, the public is still concerned about their adverse aesthetic impacts. Wind farms, depending on their placement, potentially reduce the suitability of recreational land uses, thus affecting tourism. The individual turbines also impact existing landscape character due to their high visibility. Other visual aesthetic impacts would result from the removal of vegetation and soil disturbances associated with construction of wind tower pads, access and service roads, electrical transmission lines and the introduction of a variety of wind turbine structures.

Residents in the immediate vicinity of the wind parks are concerned not only with these visual impacts and the noise disturbances mentioned previously, but also with the interference to television reception caused during the operation of the wind turbines. Wind turbines scatter television signals producing both amplitude and phase modulations of the signals at the receiver. The upper UHF channels are found to be particularly vulnerable to such distortions.

Conclusions

Expanding generation of electricity with wind power would generate the following major environmental impacts: disturbance of sizable land areas as thousands of giant windmills disrupt existing uses and impact wildlife; the possibility of erosion and changes in drainage patterns in certain areas; visual impacts; considerable noise; and interference with television reception. In addition, the establishment of large windmills will produce an indirect environmental impact by increasing the demand for steel, and thus iron and coal with all their attendant problems.

Solar Thermal Central-Station Electricity Plants

Solar thermal electric plants convert radiant energy from the sun into thermal energy, which is then transformed into electric energy. The active systems which are considered to be both economical and efficient include central receivers, parabolic dishes and solar troughs. The central receiver system utilizes an array of sun-tracking mirrors (heliostats) which reflect solar radiation onto a receiver mounted on top of a central tower. Parabolic dishes and troughs are distributed-collector systems which track the sun. The basic difference between the central receiver and the distributed collector systems is that in the former the solar energy radiating on a large area is transmitted to a central point as radiation, while in the latter, the energy is carried as heat in a fluid.

Air Impacts

It is evident from Table IV-14 why solar thermal technologies are considered to be environmentally benign. Under normal operating conditions, there will be no pollutants emitted. Increasing solar use relative to OCS gas will cut emissions of hydrocarbons, sulfur oxides, carbon monoxides, and nitrogen oxides. Emissions of all regulated pollutants will be cut, and at the same time, there will be no increase in global warming levels. Impacts on air quality may occur in the event of a fire or accident when by-products from the heat transfer and storage subsystems may be released to the atmosphere. These possible air emissions include nitrogen oxides, sodium monoxide/peroxide, and sodium hydroxide mists or dusts. Some environmental emissions are also associated with the fabrication of the materials used to construct solar thermal electricity generating equipment.

Water Impacts

Some water quality degradation can occur due to the planned disposal or accidental release of water pollutants at the plant site. These consist of antifreeze and anti-corrosion fluids from the heat transfer and storage systems, and waste rinse solutions from the cleaning of the mirrors. Both effluents could have minor impacts on aquatic ecosystems. Solar thermal plants also concentrate heat which must be discharged either into local streams or into the atmosphere.

Land Impacts

Land requirements could be considerable, especially if distributed collector systems are utilized. In addition to this direct commitment of land, installation and operation activities of solar thermal electric plants may produce habitat loss, erosion of vegetation, and small micro-climatic changes, including decreased temperature.

Societal Impacts

The most obvious impacts associated with solar thermal plants are visual, arising from the large deployed modules and transmission lines. Solar thermal towers can potentially be as high as 1000 feet for a 100 megawatt plant. Consequently, if a solar plant site is proposed in proximity to an airport or a major airline route, special precautions are required.

Workers at the solar plant site must also take precautions when cleaning and maintaining the mirrored surfaces. The solar reflections from heliostats and parabolic collectors can be very intense.

Conclusion

The major environmental impacts associated with increased use of solar energy production include: use of large land areas for sitings of reflectors or heliostats, some water quality degradation due to the discharge of waste rinse solutions, loss of wildlife habitat, intense reflections from heliostats, visual disturbances, and the emissions associated with the fabrication of materials used to construct the systems.

TABLE IV-14
Solar Thermal Central-Station Electricity Plants

AIR IMPACTS												
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Electricity From Solar Thermal Power	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Solar Thermal Plant	N	Y*	N	N	N	N	N	N	N	Y*	N	N

* NO_x may be released as a by-product of heat transfer in the event of a fire or accident.

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Electricity From Solar Thermal Power	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Pollut.	Other
Solar Thermal Plant	N	Y	N	Y	Y	N	N	N	N	Y	Y

Photovoltaic Energy Systems

From Table IV-15, it is evident that photovoltaic (PV) electricity production is primarily environmentally benign. However, PV energy systems, which convert the sun's radiation directly into electricity, may produce some effluents during the production, installation, operation, and maintenance of the devices, and the decommissioning of spent devices. The effluents emitted during the photovoltaic fuel cycle and their potential impacts are discussed in detail below.

Air Impacts

The impacts of PV energy systems on ambient air quality is largely indirect. The fabrication of thin-film photovoltaic cells requires large quantities of toxic gases. Adverse impacts can occur in the handling and disposing of the unreacted portions of these gases.

Accidental releases of hazardous air pollutants at the plant site may result either from leaking storage, distribution, and process systems or from the venting of process and control equipment during abnormal conditions, such as fire, power failure, etc. Whether these toxic gases have a larger negative environmental impact than the negative impacts arising from the fabrication of more conventional electrical generation equipment has never been examined.

Water Impacts

PV energy systems have no significant water impacts.

Land Impacts

Solid wastes are produced as by-products of the production process. Some solid wastes may be toxic or hazardous and require controlled disposal. During construction of the photovoltaic power plant, impacts will result mostly from the disruption of soils, vegetation and wildlife by machinery. Impacts after construction of a large centralized plant will relate to changes in the microclimate, ecology, and aesthetics of the area simply from the presence of the large arrays and from routine maintenance. The use of PV cells for the dispersed, localized generation of electricity would have minimal land impacts.

Societal Impacts

There could be considerable risks to populations living adjacent to production facilities due to the significant quantities of the toxic gases used during production of PV cells and during activities at the plant site.

Conclusion

The major environmental impacts associated with the expanded use of photovoltaics as a source of electricity include: the deterioration of air quality from emissions of toxic air pollutants released during production of the photovoltaic cells and from leaks at the plant; the problem of disposing of toxic, as well as non-toxic solid wastes produced during the production of the cells; and the potential for adverse land impacts from PV plant construction and decommissioning.

TABLE IV-15
Photovoltaic Energy Systems

AIR IMPACTS												
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Electricity From PV Power	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Production of PV Cells	N	N	N	N	N	N*	N*	N	N	N	N	N
PV Plant Site	N	N	N	N	N	N	N	N	N	N	N	N

* Large quantities of toxics, other than BTX and aldehydes, are emitted during fabrication of the PV cells.

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Electricity From PV Power	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Pollut.	Other
Production of PV Cells	N	N	N	Y	Y	N	Y	Y	N	Y	Y
PV Plant Site	N	N	N	Y	Y	N	N	N	N	Y	Y

Hydroelectric Power

Hydroelectric power projects use the energy of flowing water to generate electricity. Usually hydro projects require a dam to create a reservoir of water except in those instances where a naturally occurring water fall provides the energy to drive the generators. The water from the reservoir flows through generator turbines, which produce the electricity. At present, hydropower is a major source of energy for electricity generation worldwide.

Since hydropower exploits the energy in an existing body of water, the environmental consequences of constructing and operating a hydro facility result principally from modifying free-flowing waters. The severity of the impacts will vary from site to site depending on the type of project and specific fish species and terrain that are affected. As shown in Table IV-16, hydroelectric power facility construction and operation have mixed effects on water quantity and quality, land, aquatic and terrestrial ecosystems, and may or may not lead to a reduction in recreational activities.

Air Impacts

Apart from transitory impacts on ambient air quality from construction equipment during the initial construction phase, unlike the use of fossil fuels, hydropower development and operation activities do not produce any emissions of regulated or toxic pollutants, and thus, do not impact acid rain or tropospheric or stratospheric ozone formation. However, the presence of a very large body of water often has local climatic implications. Man-made lakes are prone to steam fog, especially near the shoreline in tropical climates. Summer temperatures in the area surrounding the lake are somewhat decreased and winter temperatures may be increased.

Water Impacts

Despite the fact that the newly created reservoir might have short-term advantageous effects on fish populations, in general, the effects of the dam and reservoir on fish may be negative. In the early years, fish populations are usually very large in the new reservoirs. But sooner or later the balance of the fish species will change and the number of species will decrease. This results, in part, from an increase in commercial and sport-fishing. There are immediate impacts on anadromous fish species. Unless special fish ladders are installed, the construction of dams delays the fishes' migratory behavior, leading to aquatic habitat and water quality degradation. Fish can also be killed in turbine intake structures and passages or when passing over and falling from the dam. Downstream, fluctuations in the river level, as a result of power peaking, may strand fish on shorelines or in shallow areas and expose eggs.

Thermal stratification often becomes a problem in deep and poorly mixed reservoirs. The layer of cold, stagnant water at the bottom of the lake loses dissolved oxygen due to decomposition of organic matter. As anaerobic populations begin to take over, nitrates are reduced to nitrites and then further to ammonia. This results in releases of methane, ammonia, and hydrogen sulfide, which are all toxic to aquatic life and impact water quality and use. If the cold, stagnant water on the bottom of the reservoir is released downstream, many fish species will be eliminated as most are intolerant to wide ranges in stream temperature.

TABLE IV-16
Hydropower Systems

	AIR IMPACTS											
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Electricity From Hydropower	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Construction of Dam and Reservoir	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Operation	N	N	N	N	N	N	N	N	N	N	N	N

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Electricity From Hydropower	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Pollut.	Other
Construction of Dam and Reservoir	N	Y	N	Y	Y	N	N	N	N	Y	Y
Operation	N	Y	N	Y	Y	N	N	N	N	Y	Y

Land Impacts

The most obvious immediate impact of dam construction is on land usage. Very substantial areas of land are inundated in large hydro projects. With the land inundated with water the area can no longer be used for agricultural or forestry purposes. As water starts accumulating in the newly created reservoir, sediments that would have naturally been washed downstream are trapped in the reservoir. Additionally, both flooding and construction activities can uproot local habitats and disrupt the seasonal migratory patterns of wildlife. Downstream, the sediment-free water flows at a faster velocity which may lead to erosion of riverbeds and banks, deltas or estuaries, and seashores. Loss of the silt can upset the agricultural productivity of the land. On the other hand, the creation of the reservoir and dam can be used as a flood control mechanism, making available land downstream that, no longer being subject to flooding, could be used for agriculture.

Hydroelectric developments may have adverse impacts on the natural vegetation surrounding the river's and reservoir's shorelines. The diversity of plant species is often reduced, while the area may become inundated with aquatic weeds that grow and multiply at alarming rates. The weeds are a breeding ground for parasitic and water-borne diseases.

Societal Impacts

Construction of the dams requires either landfill or earthfill. The large scale excavation operations required to obtain these building materials can permanently scar the environment. Additionally, the generators, dam, and construction features will intrude on the landscape.

Because hydropower projects use up so much land (thousands of square kilometers), resettlement of any human populations in the affected area is usually required. This typically causes social problems. The impact on tourism and recreation can be either beneficial or adverse depending on what recreational activities existed before the construction of the dam and were subsequently eliminated and what is developed afterwards.

Depending on where the dam and reservoir are constructed, valuable historic artifacts and archaeological sites may be lost. Populations residing downstream often fear the possibility of flooding, although control of a free flowing river often lessens the possibility of flooding. The creation of the reservoir also provides water for irrigation projects which facilitates the spread of agriculture in more arid regions.

Conclusion

The major environmental impacts associated with increased hydroelectric power generation include: micro-climatic changes surrounding the reservoir; aquatic habitat and water quality degradation due to water losses downstream and fluctuations in water levels and releases of toxics caused indirectly from thermal stratification; adverse impacts on flora and fauna and disruption of wildlife habitats from flooding and hydropower construction activities; erosion of stream beds, estuaries, deltas, and seashores from increased river velocity; potential losses or gains of recreational and tourism areas; visual intrusions on the landscape from excavation of dam building materials; and societal impacts such as population relocation, but also the potential expansion of agriculture and control of flooding.

GAS CONSERVATION MEASURES

As shown, in Table IV-18, forgone gas consumption does not produce air, water, land impacts or generate any solid wastes. Thus, the impacts on the environment from gas conservation in residential gas appliances tend to be highly positive.

Conclusion

Gas conservation leads to reduced air, water, land, and solid waste impacts relative to the production and transport of OCS natural gas.

SUMMARY OF MAJOR IMPACTS FROM ALL ALTERNATIVES

Tables IV-19 and IV-20 present a comparison of the major environmental impacts of production and transportation for each energy alternative and the illustrative OCS cases. The overview matrices only consider the environmental implications of the alternatives from the point where they begin to affect the United States.

Table IV-19 summarizes the major environmental impacts of OCS crude oil and the energy alternatives to OCS crude oil. This overview shows that the environmental impacts of the oil alternatives can be expected in most of the same categories as the illustrative OCS oil case. All of the alternatives have substantial impacts on air, except oil conservation.

Table IV-20 summarizes the major environmental impacts of OCS natural gas and the energy alternatives to OCS natural gas. Again, the environmental impacts of the gas alternatives can be expected to be the same in some of the categories as the illustrative OCS gas case. Some of the patterns, however, are very different. Gas conservation is clearly more beneficial than any of the other alternatives. Renewable energy alternatives are clearly beneficial in terms of air impacts, although so is nuclear power. Impacts on water, land, and society are more complicated, though here again, renewables appear to be more beneficial.

Tables IV-19 and IV-20 indicate the environmental impacts of consequence, but they do not quantify the level of the impacts. A rigorous comparison of the costs and benefits of any alternative would require quantification of the environmental impacts, which can only be done on a site-specific basis.

TABLE IV-18
Gas Conservation

	AIR IMPACTS											
	Regulated Pollutants					Toxics		Acid Rain	Ozone		Green-house Gases	Noise
									Trop.	Strat.		
Conservation of Gas	SO_x	NO_x	Part.	CO	VOC	BTX	Aldehyd	(SO_x+NO_x)	$(VOC+NO_x)$	(NO_x)		
Extract./Product.	N	N	N	N	N	N	N	N	N	N	N	N
NG Transport-Pipeline	N	N	N	N	N	N	N	N	N	N	N	N

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Conservation of Gas	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands	Nontoxic	Toxics	Radioact Waste	Scenic Pollut.	Other
Extract./Product.	N	N	N	N	N	N	N	N	N	N	N
NG Transport-Pipeline	N	N	N	N	N	N	N	N	N	N	N

TABLE IV-19
Production/Transportation Environmental Impacts of Alternatives to OCS Oil

AIR IMPACTS							
	Regulated Pollutants	Toxics	Acid Rain	Ozone		Greenhouse Gases	Noise
				Trop.	Strat.		
			(SOx+ (NOx)	(VOC+ NOx)	(NOx)		
OCS Oil	Y	Y	Y	Y	Y	Y	Y
Increased Domestic Onshore Oil	Y	Y	Y	Y	Y	Y	Y
Increased Imported Oil	Y	Y	Y	Y	Y	Y	Y
Import. Methanol From NG	Y	Y	Y	Y	Y	Y	Y
Ethanol From Corn - Gasohol	Y	Y	Y	Y	Y	Y	Y
Conservation of Oil	N	N	N	N	N	N	N

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
	Ground water	Surface Water	Ocean	Erosion/ Vegetat	Wildlife	Wetlands*	Nontoxic	Toxics	Radioact Waste	Scenic Pollut.	Other
OCS Oil	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y
Increased Domestic Onshore Oil	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y
Increased Imported Oil	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Imported Methanol From NG	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Ethanol From Corn - Gasohol	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y
Conservation of Oil	N	N	N	N	N	N	N	N	N	N	N

- Site specific.

TABLE IV-20

Production/Transportation Environmental Impacts of Alternatives to OCS Gas

AIR IMPACTS							
	Regulated Pollutants	Toxics	Acid Rain	Ozone		Green-house Gases	Noise
				Trop.	Strat.		
Electricity Generation Feedstock/Technology			(SO_x+ NO_x)	(VOC+ NO_x)	(NO_x)		
OCS Gas	Y	Y	Y	Y	Y	Y	Y
Increased Domestic Onshore Gas	Y	Y	Y	Y	Y	Y	Y
Increased Imported LNG	Y	N	Y	Y	Y	Y	Y
Nuclear	Y	Y	Y	Y	Y	Y	Y
Coal	Y	Y	Y	Y	Y	Y	Y
Residual Fuel Oil	Y	Y	Y	Y	Y	Y	Y
Wind	N	N	N	N	N	N	Y
Solar Thermal	N	N	N	N	N	N	N
Photovoltaic	N	Y	N	N	N	N	N
Hydropower	Y	Y	Y	Y	Y	Y	Y
Gas Conservation	N	N	N	N	N	N	N

TABLE IV-20 (continued)
Overview of Environmental Impacts of Alternatives to OCS Gas

	WATER IMPACTS			LAND IMPACTS						SOCIETAL IMPACTS	
							Solid Wastes				
Electricity Generation Feedstock/Technology	**Ground water**	**Surface Water**	**Ocean**	**Erosion/ Vegetat**	**Wildlife**	**Wet-lands***	**Non-toxic**	**Toxics**	**Radi-oact Waste**	**Scenic Pol-lut.**	**Other**
OCS Gas	Y	Y	Y	N	N	N	Y	Y	N	Y	Y
Increased Domestic Onshore Gas	Y	Y	N	Y	Y	Y	Y	N	N	Y	Y
Increased Imported LNG	N	N	N	Y	Y	Y	N	N	N	Y	Y
Nuclear	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y
Coal	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y
Residual Fuel Oil	Y	Y	Y	N	Y	N	Y	Y	N	Y	Y
Wind	N	N	N	Y	Y	Y	N	N	N	Y	Y
Solar Thermal	N	Y	N	Y	Y	N	N	N	N	Y	Y
Photovoltaic	N	N	N	Y	Y	N	Y	Y	N	Y	Y
Hydropower	N	Y	N	Y	Y	N	N	N	N	Y	Y
Gas Conservation	N	N	N	N	N	N	N	N	N	N	N

* Site specific.

D

Oil Spill Response Capabilities for Offshore Oil and Gas Operations

D. OIL SPILL RESPONSE CAPABILITIES FOR OFFSHORE OIL AND GAS OPERATIONS

1. Introduction

a. Background

A blowout in the Santa Barbara Channel and two blowouts and associated fires in the Gulf of Mexico in 1969 and 1970 raised public concern over the possibility of pollution from OCS oil and gas operations. Following those events, stricter requirements for prevention of hydrocarbons discharges were adopted and, additional requirements were developed to ensure that lessees are prepared to contain and recover the discharges of hydrocarbons when they do occur. The requirements for cleanup capability included the stationing of response equipment in strategic locations and the development of plans for dealing with spills of hydrocarbons. These requirements are often reviewed and further modified when warranted.

More recently, the ability of the oil industry to respond to oil spills in coastal areas was given a severe test following the March 24, 1989 grounding of the *Exxon Valdez* on Bligh Reef in Prince William Sound, Alaska, which spilled 241,000 barrels of oil and subsequently spread to the Gulf of Alaska. Following this spill, the National Response Team (NRT) prepared a report which stated that "[t]he lack of necessary preparedness for oil spills in Prince William Sound (Alaska) and the inadequate response actions that resulted mandate improvements in the way the nation plans for and reacts to oil spills. . . ." (Skinner and Reilly, 1989) This spill pointed out the need to continuously evaluate the readiness of lessees to respond to spills of all sizes. Although no US OCS leases have resulted in spills of the magnitude of the *Exxon Valdez* spill, it is possible that an uncontrolled well flowing over a long period could result in a spill of such magnitude. (Such a long-duration spill would not likely be nearly as damaging as an instantaneous tanker spill, however, because of the capacity of the environment to dissipate the effects of a long-duration spill.) Following the NRT report, both the NRT and Minerals Management Service (MMS) initiated reviews of their respective regulations for oil-spill response. A thorough review of MMS regulations did not uncover any significant deficiencies in OCS oil spill contingency planning and response requirements. This is largely due to the fact that MMS has concentrated a lot of effort on contingency planning and oil spill response during the 20 years since the Santa Barbara oil spill (Danenberger, 1990).

It is necessary to view spills from offshore oil and gas production operations in a wider context. In 1985, the National Academy of Sciences (NAS) conducted its own study of the sources of oil in the ocean (*Oil in the Sea: Inputs, Fates, and Effects*) and found that of all oil spilled into the oceans: 36 percent came from municipal and industrial wastes and runoff; 34 percent came from tanker operations and accidents; 11 percent came from other marine transportation and marine terminals; 9 percent came from the atmosphere; 8 percent came from natural sources including marine seeps and sediments; and 2 percent came from offshore production operations.

Recently, the United States has been importing nearly half of all the oil it consumes, which means that nearly one-half of all U.S. oil arrives by tankers—a statistical category that contributes 34 percent of all the oil that is spilled into the sea. Oil imports are expected to increase in the future. Thus, in terms of oil spill probabilities, the United States already is beginning to live in the worst of all possible worlds. Tankers carrying foreign oil imports currently ply the seas off California, New England, and the Florida Keys—areas in which offshore oil and gas exploration activities are prohibited. On a statistical basis, these areas would be more safe from oil spills if the oil involved was being produced from offshore oil and gas leases.

There is a substantial difference in response capabilities for OCS oil and gas operations compared to vessel operations. Two of the key factors in determining the success or failure of spill response is preparedness and response time. Offshore spill response is generally successful when response crews and equipment are adequately prepared and immediately available to respond to a spill. As indicated above, the greatest volume of oil spilled offshore is not related to OCS drilling and production activities: it is generally from merchant marine spills which have not had a dedicated spill-response capability. Tanker spills often occur in remote locations, and are usually the result of a grounding or a collision at sea under adverse weather conditions. One encouraging development is that pursuant to the Oil Pollution Act of 1990 (OPA), tank vessels now must have Oil Spill Contingency Plans (OSCP's) which include plans for a worst case discharge. The USCG is currently drafting regulations for such OSCP's.

This appendix is concerned with the current capabilities of the oil industry to respond to potential spills related to oil and gas leasing activities on the OCS. The capabilities discussed reflect both the equipment and procedures in place prior to the spill in Prince William Sound and any new procedures and equipment added since that time.

b. Responsibility and Authority

Both the Outer Continental Shelf Lands Act (OCSLA) and the Federal Water Pollution Control Act (FWPCA) contain provisions relating to oil spill prevention and cleanup. Section 204(a) of the OCSLA (43 U.S.C. § 1348 (a)) provides broad authority and responsibility to the Department of the Interior (USDOI) and to the Department of Transportation (USDOT) for the enforcement of safety and environmental regulations. This section provides that:

> The Secretary [of the Interior], the Secretary of the Department in which the Coast Guard is operating, and the Secretary of the Army shall enforce safety and environmental regulations pursuant to this subchapter.

The OPA amends § 311(c) of the FWPCA. New FWPCA § 311(c) provides authority to the President to take actions with regard to removal of an oil spill. It directs the President, "in accordance with the National Contingency Plan and any appropriate Area Contingency Plan, [to] ensure effective and immediate removal of a discharge, and mitigation or prevention of a substantial threat of discharge, of oil or a hazardous substance. . . ." Moreover, it authorizes the President to "direct or monitor all Federal, State, and private actions to remove a discharge;" and for any discharge posing a "substantial threat to the public health or welfare of the United States," it requires the President to "direct all Federal, State, and private actions to remove the discharge or to mitigate or prevent the threat of the discharge."

c. Federal Government Contingency Plan Network

The National Oil and Hazardous Substance Pollution Contingency Plan, or National Contingency Plan (NCP) was developed pursuant to § 311(c)(2) of the FWPCA and the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA). The NCP (40 CFR Part 300) provides the regulatory basis for responding to oil spills and spills of hazardous substances. It establishes responsibilities and criteria for response and cleanup actions and greatly influences how the OCSLA and FWPCA are implemented with regard to spill cleanup.

The NCP calls for the establishment of a system of interlocking response teams, with the NRT responsible for overall coordination among Regional Response Teams (RRT's) and Regional Contingency Plans (RCP's). The RRT's are designated for intergovernmental planning and coordination of preparedness and response actions and are responsible for preparation of RCP's.

The Federal Government's network of contingency plans is reviewed through two procedures. First, all members of the RRT's are given an opportunity to review the draft NCP's and RCP's to ensure that the plans recognize and integrate their respective agency's responsibilities. Second, draft NCP's and RCP's are published in the *Federal Register* for an appropriate time to allow review and comment by all interested parties.

In addition to contingency plans developed by the Federal Government and industry, there are contingency plans developed at the State and local level. For example, the State of Alaska has a State contingency plan, and the State of California has strong oil spill response legislation. Also, in the Gulf of Mexico, the States of Florida, Texas, Alabama, and Mississippi all have oil and hazardous substances pollution contingency plans for their coastal areas. The State of Louisiana presently is developing a set of criteria to define a process for responding to a spill. Proceeding toward the local level, each successive level of planning is intended to contain more site-specific information to permit quick organization of an effective response to any pollution incident.

The OPA also amended § 311 (d) of the FWPCA to strengthen the NCP including, among other requirements, (1) establishment of new provisions for U.S. Coast Guard (USCG) strike teams to ensure adequate personnel staffing, pollution control equipment, and planning to protect fisheries and wildlife; (2) establishment of criteria and procedures to ensure immediate and effective Federal response to any discharge or threat of discharge that results in a substantial threat to the public health or welfare; and (3) establishment of procedures and standards for removing a worst case discharge of oil, and for mitigating or preventing a substantial threat of such discharge.

The U.S. Environmental Protection Agency (USEPA) and USCG jointly chair the NRT, and the RCP's fulfill the same requirements on a regional level as the NCP does for the nation. For example, two RCP's operate in the Gulf of Mexico and are maintained by the USCG, Regions IV and VI. Generally, USEPA has Federal On-Scene Coordinator (OSC) responsibility for spills onshore and USCG has responsibility for spills in major bodies of water inland and in coastal and offshore areas. Specific boundaries for USEPA or USCG jurisdiction are determined by agreement in the Federal RCP's. These Federal boundaries become complicated when spills cross geographic or local jurisdictional boundaries.

When a spill occurs in coastal and offshore navigable waters of the United States, the USCG Captains-of-the-Port (COTP's) are designated as the OSC's. Under the new NCP being prepared pursuant to the OPA with USEPA and USCG guidance, it is likely that USCG COTP's will continue to serve as the designated Federal OSC's for coastal areas for which an Area Contingency Plan (ACP) is required under new FWPCA § 311(j). There are currently 49 COTP areas. Each USCG COTP will probably serve as predesignated OSC for each Port Area and will likely have the authority to further divide the Port Area to address significant local requirements or concerns.

Under the NCP the OSC, "in consultation with legal authorities when appropriate, shall make a reasonable effort to have the discharger voluntarily and promptly perform removal actions." The OSC may also direct and monitor cleanup progress and provide advice and counsel to the "responsible party" as necessary.

In the event of an oil spill at an OCS oil and gas exploration or production operation, the lessee would be the responsible party as defined in the OPA and the NCP. Thus, it is the lessee who is in charge of an oil spill response, unless the spill (1) constitutes a substantial threat to the public health or welfare, or (2) is a worst case discharge for the facility in question. In the latter two cases, the Federal OSC likely will be responsible for directing all containment and cleanup efforts.

To provide support to the OSC, an RRT is established for each standard Federal region, except for Alaska, Oceania in the Pacific, and the Caribbean area, each of which has a separate standing RRT. The RRT's serve as regional bodies for oil spill preparedness planning and can be convened at the request of an OSC for coordination and advice during a spill incident. Each RRT is comprised of representatives from 15 Federal agencies having environmental responsibilities, appropriate State agencies, Indian tribes, and local agencies as arranged by State representatives. The USDOI has a member on each RRT, and the USDOI can assist an OSC during a spill by providing expertise concerning fish and wildlife habitat and land and water management. A Scientific Support Coordinator is supplied by the National Oceanic and Atmospheric Administration to coordinate and develop scientific response information as needed.

New FWPCA § 311(j), as amended by the OPA, addresses the development of an expanded national oil spill response planning system and establishes Area Committees—with representatives from

Federal, State, and local agencies—and ACP's as the primary components of this structure. Thus, the Area Committees and ACP's represent a subdivision of authority below the RRT's and RCP's. New FWPCA § 311(d)(2)(K), as amended by the OPA, requires the NCP to designate a Federal OSC for each area for which an ACP is required.

Generally, the OPA adds § 311(j)(4) to the FWPCA to establish many new requirements for Area Committees that are to function under the direction of USCG Federal OSC's in coastal areas. The Area Committees will have three primary responsibilities: (1) preparation of the ACP's (which are to include, among other requirements, guidelines for decisions on the use of dispersants); (2) working with State and local officials "to enhance the contingency planning of those officials and to assure preplanning of joint response efforts, including appropriate procedures for mechanical recovery, dispersal, shoreline cleanup, protection of sensitive environmental areas, and protection, rescue, and rehabilitation of fisheries and wildlife;" and (3) working with State and local officials "to expedite decisions for the use of dispersants and other mitigating substances and devices." Thus, it will be the responsibility of the Federal OSC's and Area Committees to ensure that Federal, State, and local response agencies and actions are fully coordinated.

The ACP's are to meet the following requirements:

(1) When implemented with the NCP, are "adequate to remove a worst case discharge, and to mitigate or prevent the substantial threat of such discharge, from a vessel, offshore facility, or onshore facility;"

(2) describe the area covered by the plan including areas of special economic or environmental importance;

(3) describe the responsibilities of the owner or operator and of Federal, State, and local agencies in preventing, mitigating, or removing a discharge;

(4) list all equipment, dispersants, and personnel available to an owner or operator and to Federal, State, and local agencies for any discharge or threat of discharge;

(5) describe procedures for expediting decisions concerning use of dispersants;

(6) **"describe in detail how the plan is integrated into other Area Contingency Plans and vessel, offshore facility, and onshore facility response plans approved under this subsection, and into operating procedures of the National Response Unit;"** [emphasis added]

(7) "any other information the President requires; and

(8) periodic update by the Area Committee.

The RRT structure has been in operation for many years and should serve to ensure coordination and avoid duplication of effort between ACP's and different levels of government.

Title IV of the OPA also amended the FWPCA to establish a USCG National Response Unit (NRU) at Elizabeth City, North Carolina, and provides the NRU with authority to "coordinate use of private and public personnel and equipment to remove a worst case discharge, and to mitigate or prevent a substantial threat of such a discharge, from a vessel, offshore facility, or onshore facility operating in or near" an area covered by an ACP.

The primary functions of the NRU are to: (1) compile and maintain a computerized list all of spill removal personnel and equipment which are available to Federal and State agencies and the public; (2) provide technical assistance, equipment, and resources requested by a Federal OSC; (3) coordinate the use of private and public personnel to respond to an actual or potential worst case discharge; (4) provide technical assistance for preparation of ACP's; (5) administer USCG strike teams established under the NCP; (6) maintain a file of all ACP's; and (7) review all ACP's.

Title IV of the OPA strengthens the authority of the NCP to provide for establishment or designation of USCG strike teams, consisting of:

(i) personnel who are trained, prepared, and available to provide necessary services to carry out the National Contingency Plan;

(ii) adequate oil and hazardous substance pollution control equipment and material; and

(iii) a detailed oil and hazardous substance pollution and prevention plan, including measures to protect fisheries and wildlife.

In the event that an oil spill results from oil and gas activity on the OCS, MMS maintains responsibility for operations on the OCS facility and the Federal OSC is responsible for cleanup of the ocean. Since the Federal OSC for an OCS spill would be from the USCG, a potential exists for confusion concerning the division of responsibility. To minimize possible confusion during emergency situations, USDOI and USDOT, in August 1971, established a Memorandum of Understanding (MOU) under which MMS (the U.S. Geological Survey in 1971) would have responsibility for actions to control the spill source within a 500 meter radius of a platform and USDOT would have cleanup responsibility outside that radius. This enables MMS to suspend cleanup activities within 500 meters of the platform for the purpose of facilitating measures to abate the source of the pollution.

To further ensure effective coordination among the USCG, MMS, and industry with respect to an OCS-related operation, in August 1989, MMS and USCG entered into an MOU to enhance planning and coordination between the agencies as previously established under the USDOT-USDOI MOU of August 1971. Under the two agreements, the MMS is still responsible for spill abatement and mitigation measures on or within 500 meters of a platform, drilling rig, or other OCS facility.

The USCG has the ultimate responsibility to ensure that the oil spill is effectively cleaned up; however, it is the responsibility of all OCS oil industry operators to take immediate corrective action when an oil spill has occurred. The method of response to a particular spill will depend on many factors including the location of the spill in relation to sensitive environmental areas, distance to shore, role of industry cooperatives, prevailing weather conditions, and prevailing sea conditions. Since these factors vary significantly between areas of the OCS, planned response actions also vary between facilities in different areas of the OCS.

The MMS deals with these differences by requiring that each lessee develop an OSCP to be submitted with each Exploration Plan, Development and Production Plan, and Development Operations Coordination Document. Requirements for individual OSCP's are more fully discussed below under the section on industry OSCP's.

The OPA includes additional provisions which place more responsibility on vessel and facility owners with regard to oil spill response and add new authority and structure to the national contingency planning process. For example, Title IV of the OPA requires owners or operators of tank vessels or facilities (including OCS facilities) to "prepare and submit to the President a plan for responding, to the maximum extent practicable, to a worst case discharge, and to a substantial threat of such a discharge, of oil or a hazardous substance."

The OPA, as implemented by Executive Order (E.O.) 12777, empowers the Secretary of the Interior with the authority (under sections 311(j)(1)(C) and 311(j)(5) of the FWPCA) to issue regulations requiring operators of offshore facilities and associated pipelines, including those located in State waters, to provide for prevention and containment of oil spills and to prepare and submit OSCP's.

To fulfill the Department of the Interior's responsibilities under E.O. 12777, the MMS is currently preparing an Advance Notice of Proposed Rulemaking (ANPR) to inform the public of the Department of the Interior's new authority under the OPA and E.O. 12777 and to solicit information concerning the development of new requirements, particularly for those offshore facilities and associated pipelines located in State waters. In accordance with E.O. 12777 and as a result of the public rulemaking process, the MMS will be publishing new regulations for oil spill prevention and OSCP's that will include plans for responding to a worst case discharge. Nevertheless, OSCP's for OCS oil and gas exploration and production operations have had a 20-year head start compared to many vessels and onshore facilities which are only now being required to have OSCP's under the OPA.

Presently, no agreements have been reached between MMS, USCG, and the States as to how the requirements of the OPA and State oil spill laws will be coordinated. The States are currently represented on the RRT's, and their representatives can make the requirements of State laws known to their Federal counterparts on the RRT's. In the absence of new ACP's, the USCG still operates under existing RCP's and the NCP which provide for designation of USCG and other Federal, State, and local government responsibilities during a major spill event. The ACP's will likely be similar to these existing RCP's. Although individual ACP's have not yet been developed, such plans are not necessary to effect oil-spill-response planning and preparedness for OCS activities.

The absence of ACP's does not diminish an OCS lessee's ability or relieve its responsibility to respond to a spill under its own OSCP. The OSCP is submitted with every Exploration Plan and Development and Production Plan and is reviewed and commented on by other Federal and State agencies—primarily USCG and State regulatory agencies. The lessee is responsible for implementing its OSCP and responding to a spill. Lessees are required to have the resources necessary to implement a spill response commensurate with their exploration or development activity. If a spill were to occur at an OCS facility, the USCG has a designated Federal OSC responsible for monitoring the lessee's response efforts and, if necessary, assuming Federal control of the response.

d. Inspection And Reporting

The MMS has established inspection and reporting requirements designed to effect timely detection of spills, notification of proper authorities, and initiation of cleanup. Operators are required to conduct frequent periodic inspections to determine if pollution is occurring and to report sources of pollution to MMS. Inspection and reporting requirements are as follows:

> **§ 250.41 Inspections and reports.**
>
> (a) Drilling and production facilities shall be inspected daily or at intervals approved or prescribed by the District Supervisor to determine if pollution is occurring. Necessary maintenance or repairs shall be made immediately. Records of such inspections and repairs shall be maintained at the facility or at a nearby manned facility for 2 years.
>
> (b) Pollution response equipment shall be inspected at least monthly. Records of such inspections shall be kept for at least 2 years at a site designated in the Oil Spill Contingency Plan (OSCP).
>
> (c) All spills of oil and liquid pollutants, including pipeline spills, spills onto the surface of sea ice, and spills penetrating the surface of an artificial island, shall

be reported orally to the District Supervisor. Spills of more than 1 barrel shall be confirmed in writing. Such written confirmation shall be received by the District Supervisor by the 15th day after the spillage has been stopped. All reports shall include the cause, location, volume of spill, and remedial action taken. Reports of spills of more than 50 barrels shall include information on the sea state, meteorological conditions, size, and appearance of the slick.

(1) Spills shall be reported orally within the following time limits:

  (i) Within 12 hours, if spills are 1 barrel or less; and

  (ii) Without delay, if spills are more than 1 barrel.

(2) Lessees shall notify the responsible party and the District Supervisor of observed pollution resulting from operations other than those conducted by the lessee.

2. Industry Oil Spill Contingency Plans (OSCP'S)

a. Use and Basic Requirements of OSCP'S

To effectively accomplish oil spill containment and removal actions, MMS requires that all Exploration Plans, Development and Production Plans, and Development Operations Coordination Documents be accompanied by an OSCP. The basic requirements for OSCP's are specified in MMS operating regulations under 30 CFR 250.42.

The MMS regulations allow any lessee to submit a Regional OSCP that covers all of its operations in one area. The approved Regional OSCP may then be referenced by Exploration Plans, Development Operations Coordination Documents, or Development and Production Plans when they are submitted. This practice is employed regularly on the Gulf of Mexico OCS where there are numerous exploratory drilling operations and production platforms. However, the operator may elect or may be required to submit a site-specific OSCP with an Exploration Plan, a Development Operations Coordination Document, or a Development and Production Plan when the approved regional OSCP does not provide adequate oil spill protection or when lease stipulations or local conditions require response capabilities beyond those described in the operator's approved regional OSCP. All OSCP's are prepared by the lessee and approved by MMS following review by USCG and State regulatory agencies.

One of the primary functions of an OSCP is to establish procedures for the early detection and notification of an oil spill. These procedures are required to include a current list of names, telephone numbers, and addresses of the responsible persons and alternates who are to receive notification of an oil spill and the names, telephone numbers, and addresses of regulatory organizations and agencies to be notified when an oil spill is discovered. Each OSCP must be reviewed and updated annually. Of primary importance is ensuring that personnel and phone numbers are correct as well as equipment inventories and support services and vessels. All modifications of the OSCP must be submitted to and approved by the MMS Regional Supervisor for Field Operations.

Procedures in OSCP's identify steps that will be taken to inform response personnel within the company and affected local, State, and Federal agencies. Among other requirements, OSCP's must include the following:

(1) Designation of an oil spill response operating team comprised of trained personnel available within a specified response time and a description of the training that such personnel will receive;

(2) Designation (by name or position) of a trained oil spill response coordinator who is charged with the responsibility and is delegated commensurate authority for directing and coordinating response operations;

(3) A planned location for an oil spill response operations center and a reliable communications system for directing the coordinated overall response operations;

(4) Provisions for disposal of recovered oil, oil-contaminated material, and other oily wastes; and

(5) Provisions for monitoring and predicting spill movement.

The measures for responding to oil spills that are detailed in OSCP's are based on spill trajectory analyses. These trajectory analyses, which are included in each OSCP, are specific to the area of operations and identify environmentally sensitive areas that could be affected by a spill. The OSCP's include strategies for protection of such sensitive areas and information on equipment locations and response times.

The procedures described in OSCP's describe how equipment will be used to respond to continuous spills such as blowouts and short duration spills such as tank ruptures. An OSCP must specify whether the identified equipment will be stored on the platform, available at a staging area, or available from a secondary source, if needed. It must also include provisions for inspecting and maintaining response equipment. This equipment includes booms, skimmers, sorbent materials, other response equipment, dispersants, and support vessels. The equipment is inspected by MMS inspectors as well as by the operator.

A dispersant-use plan is required with OSCP's. It includes an inventory of the dispersants which might be proposed for use, a summary of toxicity data for each dispersant, a description of the types of oil on which each dispersant is effective, a description of application equipment and procedures, and an outline of the procedures to be followed in obtaining approval for dispersant use.

In the Alaska OCS Region only, OSCP's must include provisions for ignition of an uncontrollable oil spill (in situ burning) and the guidelines to be followed in making the decision to ignite. For instances in which in situ burning is initiated, such a step would be taken only with the approval of the Federal OSC.

Each OSCP is subject to approval on a case by case basis to ensure that the plan meets the requirements of the regulations in a manner appropriate for the particular needs of the location of the operations. Upon receipt, a plan is reviewed by MMS technical and program experts. In addition, the plan is reviewed and comments are received from other agencies (usually USCG and State regulatory agencies) in accordance with requirements of the OCS Region. This review process ensures that the proposed equipment and strategies are appropriate, personnel are adequately trained, and the lessee is fully prepared to respond to an oil spill from its facility. It also ensures that an operator's identified response time is reasonable, accurate, and sufficient to protect nearby resources and environmentally sensitive areas. Response times are further reviewed to determine whether they include sufficient time for the procurement of a vessel, for load-up and mobilization of equipment, and for transportation and deployment of equipment. Based on the results of this review, it is determined whether the primary oil spill response equipment location identified by the operator is appropriate for the subject plan and whether the projected response time allows sufficient containment and cleanup time prior to a spill's potential contact with an environmentally sensitive area.

The MMS continues to evaluate whether increased inventories of equipment and vessels are warranted. A decision to approve an OSCP is based on the ability of the specified equipment to respond to potential spills and to protect environmentally sensitive areas.

b. Inspection, Training, and Drills

Another important aspect of controlling environmental effects is the assurance that oil spill response will occur as planned. The contingency planning done for OCS oil and gas activities must be effective in assuring that responsible parties (lessees) are prepared to respond to any spill which may occur from their permitted operations.

Potential problems include (1) vessels and equipment designated in a plan being unavailable due to relocation or repairs, (2) equipment not being in working order due to lack of use, (3) personnel identified in a plan having been reassigned, or (4) inadequately trained personnel. Many potential problems can be discovered and corrected through requirements for operator-initiated inspection, training, and drills supplemented by MMS-initiated unannounced response drills for simulated spills.

Operators are required to inspect monthly all primary response equipment located at a predesignated onshore and/or offshore location (depending on the OCS Region or Planning Area). Inspections are to be conducted in a manner to ensure successful deployment and reliable operation of all primary response equipment. The operators are responsible for ensuring that secondary response equipment (for extraordinary or continuing spills) in the inventories of the lessee, cooperative response organizations, or private contractors is inspected regularly and maintained in good working condition.

Inspection and maintenance records are kept at a site identified in the OSCP. These records include a maintenance schedule and a list of any replacements or repairs. All records are to be made available to the MMS upon request.

Regulations at 30 CFR 250.43 include the following requirements for training and drills:

> **§250.43 Training and drills.**
>
> (a) The lessee shall ensure that the oil spill response operating team is provided with hands-on training classes at least annually in the deployment and operation of the pollution control equipment to which they are assigned. The personnel responsible for supervising the oil spill response operations shall be knowledgeable about the location and intended use of available response equipment, spill reporting procedures, and deployment strategies for the facilities under their jurisdiction. Such supervisory personnel shall be trained in directing the deployment and use of all response equipment. The lessee shall retain, at the site designated in the OSCP, course-completion certificates or attendance records issued by the organization providing the instructions. These records shall be made available to any authorized MMS representative upon request.
>
> (b) Drills for familiarization with pollution-control equipment and operational procedures shall be held when the equipment is placed initially and at least once every 12 months by the lessee or a contractor serving the lessee. The personnel identified as the oil spill response operating team in the OSCP shall participate in these drills. The drills shall simulate conditions in the area of operations and shall include deployment and operation of equipment. A time schedule for familiarization drills with a list of equipment to be deployed shall be submitted to the Regional Supervisor. The schedule shall provide sufficient advance notice to allow MMS personnel to witness any of the scheduled drills. Drill conditions, results, and the names of the participants in the drill shall be recorded, and the records shall be maintained for 2 years at a site designated in

the OSCP and made available to MMS personnel. The Regional Supervisor may initiate unscheduled drills and may require an increase in the frequency or a change in the location of the drills, equipment to be deployed, or deployment procedures and strategies. The Regional Supervisor will evaluate the results of drills and advise the lessee of any necessary changes in response equipment, procedures, or strategies.

To be certain that oil-spill-response equipment identified in OSCP's is present and in good working condition, the MMS conducts periodic onsite inspections of this equipment. A complete inspection of primary spill response equipment is conducted at least annually and includes the following:

1. Inventorying the equipment to ensure that all the equipment identified in the contingency plan is in place.
2. Ensuring that each piece of equipment that has mechanical moving parts is functionally tested (i.e., pumps, generators, power packs, skimmers, etc.).
3. Inspecting booms, storage bladders, and all other synthetic materials such as ropes, hoses, and control lines to ensure that they are sound and have not dry-rotted in storage or in transit.
4. Inspecting all electronic equipment, including radios, radio direction finders, buoys, etc., to ensure that the equipment is functional and batteries are available as needed.
5. Inspecting all onsite spill-response vessels to ensure that they are functional and well maintained.
6. During response drills, evaluating equipment and response team performance during deployment and operation of the equipment.
7. Ensuring that the operator has a program in place for monthly checks and maintenance for all primary spill-response equipment.
8. Reviewing training records to ensure that designated response team members have attended and satisfactorily completed oil spill response equipment training.
9. Checking all major spill-response vessels and large skimming systems to ensure that they are functional, well maintained, and that operational certificates or appropriate maintenance records are current (if required).

Secondary spill-response equipment (i.e., equipment identified in the OSCP for response to a large or continuing spill) is normally stored at an onshore support base, or other offsite locations. This equipment can consist of an individual operator's equipment and/or cooperative equipment jointly owned and maintained by several companies operating in the area. Since cooperative equipment inventories are very large and often duplicated (i.e., many pumps, generators, etc.), it is not inspected as comprehensively as primary equipment. Nevertheless, such inspections are sufficiently thorough to provide confidence that necessary equipment will be available and operational if needed and include the following:

1. Touring the facility and checking maintenance records as appropriate to ensure that the equipment is periodically functionally tested and serviced.

2. Randomly requesting that at least one piece of each type of equipment be functionally tested as a representative sample.

3. Inventorying the major pieces of spill-response equipment such as booms, skimmers, boom-deployment vessels, pumps, etc.

4. Checking a representative sample of booms, hoses, bladders, etc., for serviceability and dry rot.

5. Checking a representative sample of the electronic equipment, including radios, radio direction finders, buoys, etc., to ensure that they are functional.

6. Checking all major spill-response vessels and large skimming systems to ensure that they are functional, well maintained, and that operational certificates or appropriate maintenance records are current (if required).

Most of the above requirements were already in place for OCS oil and gas leases prior to the *Exxon Valdez* spill. Nevertheless, following the lack of adequate response to the spill, steps have been taken to reevaluate clean-up capabilities with regard to all phases of production and transportation. Also, as indicated above, in accordance with E.O. 12777, the MMS is proceeding with an ANPR to solicit information concerning the development of new oil spill prevention and OSCP's that will include plans for responding to a worst case discharge. This rulemaking will apply to offshore facilities and associated pipelines located in State waters as well as on the OCS.

c. OCS Regional Policies Concerning Oil Spill Response Drills

The MMS, with legal authority and regulations already in place, has initiated increased inspection of oil response equipment and accelerated the practice of calling unannounced upon lessees to conduct drills of response to simulated spills. The drills are witnessed by MMS inspectors, and results of the unannounced drills have identified some relatively minor areas where improved industry procedures were needed. However, other than these areas, the lessees have shown the ability to respond within limits of available equipment and vessels.

(1) Gulf of Mexico Region

Since July 1989, the Gulf of Mexico Region has implemented a program to conduct unscheduled drills of five or six randomly selected operators each year. Seven unannounced drills have been held so far, and each company's response effort in each drill has been timely and well executed.

The various drills include different stages of deployment of equipment and personnel. The four types of drills developed by the Region include (1) unannounced drills with equipment mobilization only, (2) unannounced drills with equipment mobilization and deployment, (3) spot "table top" drills, and (4) announced "table top" simulations of a large oil spills. ("Table-top" drills are indoor management and communications exercises that simulate overall spill response coordination.) A written report of each unannounced drill is required to be submitted to MMS within 15 days of the conclusion of the unannounced drill. The MMS witnesses the drills, evaluates the results of these drills, and advises the lessee of any necessary changes in response equipment, procedures, or strategies.

(2) Pacific Region

Beginning in 1990 the MMS Pacific OCS Region initiated an annual requirement of one unannounced major oil spill drill witnessed by MMS inspectors in addition to the requirement for each operator to conduct semiannual deployment drills (in place prior to 1990). These exercises are designed to involve first and second levels of response and the activation of the operator's emergency response team. (Second level represents back-up response capability identified in an OSCP for a large or continuing spill.) The first such hands-on drill simulated a spill of 10,000 barrels of oil.

From May through September 18, 1990, the Pacific OCS Region conducted 10 unannounced oil spill response drills. All of the drills were for simulated spills of 10 barrels of oil or less to test the effectiveness of the operators' OSCP's for minor spills and to verify their proficiency in implementing their plans. The exercises involved the deployment of on-site first response personnel, equipment, and vessels. In 4 of the drills, second level response co-operative personnel and vessels (Clean Seas or Clean Coastal Waters) were also deployed to assist the on-site response team.

For a typical spill drill, the MMS representative would arrive unannounced at a targeted platform, hand the foreman a written scenario, and observe and record the response. The scenario would outline time, size and cause of the spill. A rough size of the slick would be estimated, using the volume and API gravity of the spilled oil. Sorbent pads, 18 inches square, would be thrown into the ocean to be used as spill targets and show the direction of drift of the slick.

After the platform foreman was satisfied that the cause of the spill was stopped, he would activate the on-site response team, and arrange for the deployment of the on-site boom—750 feet or 1500 feet, depending on the size of the slick—and skimming device. A minimum of three vessels would be involved in the containment and cleanup—two to contain the spill and one to do the skimming. During the drill, the foreman would notify all the interested State and Federal agencies, and show the MMS representative the spill material inventory and the records of previous equipment inspections and drills. The response team's training records would also be verified.

For the 10 drills, 4 Incidents of Noncompliance (INC's) were issued. Nevertheless, all of the drills were considered to be successful. Each operator's spill plan and the MMS representative's experience were used to determine the criteria for a successful drill.

(3) Alaska Region

Because of the remoteness, relatively short drilling season, and other logistical considerations, unannounced oil spill response drills are not considered appropriate in the Alaska OCS Region for exploration drilling. Unannounced drills may be conducted in the future if production or other long-duration operations exist in the Region.

Oil spill response drills witnessed by MMS inspectors are conducted in the Alaska OCS Region for all exploratory drilling operations. During these drills, operators deploy onsite spill-response equipment in response to a preplanned scenario approved by the MMS. In addition, each operator is also required to conduct a table top and communications spill-response exercise to demonstrate its ability to implement a major spill response for a blowout. The scenario for the tabletop exercise is coordinated with the USCG. The scenario is announced at the time of the exercise, providing an element of surprise for the drill. During the tabletop exercises, spill trajectories are performed; communications and coordination among agencies are tested; plans and strategies are developed to respond to the spill; and logistics for implementing the spill response and for obtaining additional manpower, response equipment, aircraft, and storage barges are verified. In addition, onsite equipment is inspected by MMS personnel on a weekly basis and major offsite equipment inventories are inspected at least annually.

(4) Atlantic Region

There have not been any exploratory drilling operations on the Atlantic OCS since 1984. If such operations are resumed, however, the MMS Atlantic OCS Region will require oil spill response drills witnessed by MMS inspectors. Such drills will be conducted under guidelines patterned after the requirements of other OCS regions and will be appropriate to the level of oil and gas activities on the Atlantic OCS.

d. Occupational Safety and Health Administration (OSHA) Requirements

The NCP requires that oil spill responders adhere to the training and safety requirements outlined in the U.S. Department of Labor, OSHA, Hazardous Waste Operations and Emergency Response regulations at 29 CFR 1910.120. The OSHA requirements that became effective April 13, 1990, generally provide that spill responders, such as equipment operators and general laborers, having a potential for minimal exposure to a hazardous substance are required to have 24 hours of initial oil-spill response instruction and 8 hours of actual field experience. Those spill responders having a potential for exposure to a hazardous substance at levels exceeding the permissible exposure limits (generally, those situations requiring use of a respirator and protective clothing) are required to have 40 hours of initial training off site and 24 hours of actual field experience. Onsite managers and supervisors are required to receive the same amount of training as the equipment operators and general laborers, with the addition of 8 hours of specialized training in hazardous waste management. Eight hours of annual refresher training is required of both general employees and managers. The OSHA regulations include provisions that would relax the training requirements in emergency response situations.

The NCP, 40 CFR part 300.150, "Worker Health and Safety," specifically states:

> (e) Requirements, standards, and regulations of the Occupational Safety and Health Act of 1970 (29 U.S.C. 651 et seq.) (OSH Act) and of state laws with plans approved under section 18 of the OSH Act (state OSH laws), not directly referenced in paragraphs (a) through (d) of this section, must be complied with where applicable. . . . All governmental agencies and private employers are directly responsible for the health and safety of their own employees.

Therefore, it has been made abundantly clear in the NCP that lessees and operators are responsible for complying with all OSHA requirements.

3. Effectiveness of Oil Spill Containment and Cleanup Technology

a. Background

The ability to prevent, contain, and clean up oil spills has become of even greater concern to MMS as a result of the *Exxon Valdez* spill. About 241,000 barrels of spilled oil were spilled in this incident. Industry and government response proved to be inadequate for this large instantaneous spill. As a result of the *Exxon Valdez* spill, industry, MMS, and the NRT initiated reviews of their spill-response capabilities. These reviews are still ongoing.

It is hard to predict the extent to which oil can be cleaned up using current techniques. Reported figures have varied from claims of 100 percent recovery to no recovery. In many cases the reported volume recovered is distorted by water and other materials mixed in with the oil. Nevertheless, response capabilities have improved in recent years, allowing for improved detection, containment, recovery, and removal of spilled oil. In particular, recent advances in fire-resistant boom technology have made in situ burning a viable response tool. Improvements in other areas of response technology, response strategy, and more stringent standards for response planning and preparedness have also enhanced cleanup capabilities. While many large-scale responses to oil spills in recent years have typically captured less than 20 percent of the spilled oil, it is expected that recent advances may raise these figures.

No standards exist for the performance of oil spill response equipment. Such standards are necessary before they can be adopted by regulatory authorities such as MMS, USCG, and USEPA. The MMS is working to reopen the Oil and Hazardous Material Simulated Environmental Test Tank (OHMSETT) which should be operational by late summer 1991. The OHMSETT will provide a mechanism to test new and existing devices. Equipment is currently evaluated on a less objective basis than can be done with OHMSETT (Tennyson, 1990).

b. Response Times

The spread of an oil slick following an incident makes the response time a critical factor. In some cases, winds, currents, and tides may cause spreading to occur at a very high rate. In other cases, spreading may take place at a far slower rate—currents may be circular in nature and keep a spill localized, or spreading may be in a direction away from sensitive environmental areas. Accordingly, the "appropriate response time" depends on the situation. Nevertheless, the longer it takes for response equipment to get into place, the larger the area with which the response team must deal and the more complex the job with which they will be confronted.

One way to better control response time is by locating standby vessels and containment or clean-up equipment in strategic locations in relation to sources of spills and environmentally sensitive areas. Damage resulting from a spill can be greatly reduced by having vessels in a position where action can be initiated quickly to contain a spill or to strategically place booms to protect environmentally sensitive areas. Responses to initiate containment and cleanup operations should in all cases be immediate, taking into consideration the proximity to "target" areas, the degree of sensitivity of those areas, and the length of time it will take prevailing currents to move a spill from the source to those areas.

Other factors that affect response time include time needed to procure and deliver a vessel to the spill equipment base, time necessary to transport the spill response crew to the equipment base, load-up time, the location of spill equipment base in relation to the spill location, travel speed of the response vessels, and deployment time at the spill location.

MMS AND USCG OSCP GUIDELINES: The MMS and the USCG have jointly developed "Planning Guidelines for Approval of Oil Spill Contingency Plans" that apply to OCS oil and gas exploration and development operations. The response times established by the guidelines are 6 to 12 hours for initial recovery actions, depending upon location and the weather. For extraordinary spills, the guidelines establish that additional equipment must be available within 48 hours.

Because of the remoteness of OCS operating areas off Alaska, it is necessary to position spill response containment and cleanup equipment at temporary bases in advance of any planned drilling operations. These bases would permit rapid access to drilling sites. If the risk analysis indicates shoreline contact sooner than 6 to 12 hours, response times must be adjusted accordingly.

Section IV below on "Location of Oil Spill Containment and Cleanup Equipment and Response Times" contains more specific information on staging of equipment to make timely responses to oil spill emergencies.

c. Detection and Monitoring Techniques

Typically, oil spill detection and monitoring is performed by visual observation which is limited to favorable sea and atmospheric conditions and is inoperable in rain, fog, or darkness. After several hours, spilled oil is no longer in uniform slicks but may be spread out so that as much as 90 percent of the oil is in 10 percent of the slick. Without accurate and timely thickness information, responders may spend an inordinate amount of time working on thinner and less productive portions of the slick.

Early detection can limit the size of the overall spill as well as shorten the time necessary to initiate a containment and cleanup response. Improved remote sensing techniques are under development that will detect oil slicks and measure their thickness. Airborne remote sensing packages have been developed using side-looking radar, infrared and ultraviolet or false color cameras. These systems are not resources usually available to responders. Following the *Exxon Valdez* spill, however, infrared and ultraviolet systems were used extensively to augment visual observations during the first few months of the spill. These systems proved quite effective in monitoring spill movement.

Presently, MMS research has devised a method of specially tuning shipboard navigational radar to track oil spill in all but extremely rough sea conditions. This technique has been used successfully on three successive oil spills. However, before it can become a reliable operational tool, additional research is necessary to correlate slick characteristics, i.e., slick thickness and sea state, with the radar presentation.

Presently, airborne remote sensing packages cannot discriminate between areas of a slick which are thick enough to recover and portions too thin for any reasonable response effort. The MMS and Environment Canada have initiated research on the measurement of thickness from aircraft so that response teams can direct collection efforts to areas which permit significant recovery.

Oil detection capability in ice conditions—commonly associated with the Bering, Chukchi, and Beaufort Seas and with Cook Inlet—is also being investigated. The joint MMS-Environment Canada program is evaluating technologies and has identified a laser-fluorosensor which apparently can detect oil in broken ice (Tennyson, 1990).

Spill response teams need an improved understanding of the transport of oil on the ocean surface as it is driven by winds and currents. Computerized oil spill trajectory models have been developed for this purpose, and the models are being evaluated by drift buoy studies. Drifting buoys are being tracked by satellite, and the resulting tracks are being compared to projections produced by the models to determine how well the models are able to project the spreading of spilled oil.

During several recent spills it was noted that oil has submerged and reappeared in surf zones and on beaches. It is believed that fish-finding sonar can be used to track submerged oil so that effective countermeasures can be implemented before the oil washes ashore. This and other techniques for tracking subsurface oil are planned for evaluation. Currently, there are no countermeasures for submerged oil.

d. Mechanical Containment and Cleanup Equipment

A wide variety of mechanical equipment is available for the containment and cleanup of spilled oil. General categories of such equipment include booms, skimmers, pumps, and sorbents.

BOOMS: Oil spill control booms are floating barriers designed to contain and divert spilled oil for recovery. They are also used to protect areas containing commercially valuable or environmentally sensitive resources from oil contamination during response actions. A boom is typically constructed of modern materials having a high strength-to-weight ratio and packaged compactly to allow ease in transportation and deployment.

Boom designs vary widely, but all generally incorporate the following features: freeboard to prevent or reduce splashover; subsurface skirt to prevent or reduce the escape of oil under the boom; flotation by air or a buoyant material; and a longitudinal tension member (chain or wire) to withstand the effects of winds, waves, and currents.

The length and size of boom sections are important considerations. The optimum size of a boom is largely related to the sea state under which it is to be used. As a general rule, the minimum height of freeboard to prevent oil splashover should be selected; and the depth of the skirt should be of similar dimensions. Short section lengths of boom are easier to handle and can protect the integrity of the boom as a whole, should one section fail. However, this should be weighed against the difficulty of connecting the sections effectively.

Capabilities for using open ocean booms to contain oil are not well documented in waves over 2 to 3 feet. Yet these waves heights are often exceeded on the OCS. Conventional knowledge indicates that containment booms will not effectively operate in wind speeds over 15 to 20 knots or at tow speeds exceeding 1/2 to 3/4 knots. However, during joint MMS and Environment Canada experimental oil spill operations conducted off St. John's, Newfoundland, oil was successfully contained by booms towed with the wind, instead of against it, contrary to conventional practice. This new technique resulted in successful containment in winds up to 35 knots and at tow speeds up to 1.4 knots (Tennyson and Whittaker, 1988). Further evaluation of experimental spills or spills of opportunity is required for general operational acceptance.

Currently, there are more than 30 different designs of booms in use on the OCS. The relative capabilities of these booms have not been properly quantified for lack of a standardized testing technique or protocol (Tennyson, 1990). Historically, conventional offshore containment by booms usually becomes ineffective in moderate sea conditions (seas greater than 5 feet), although at least one manufacturer claims to have a boom that has been effectively tested in seas ranging to nearly 10 feet.

The MMS, together with Environment Canada, USCG, and USEPA, has initiated the development of an extensive test protocol that would rate the performance of containment booms without requiring the intentional spillage of tens of thousands of gallons of oil as is the current international practice. This protocol was evaluated and conditionally verified off Newfoundland in 1987 (Nash and Hillger, 1988). This protocol is expected to be in final form by June 1991.

SKIMMERS AND SKIMMER SYSTEMS: Skimmers are mechanical devices designed to collect spilled oil from the water surface without changing it chemically or physically. Skimmers are classified based on their operating principles into the following major groups:

weir skimmers that provide for gravity drain off of oil;

vacuum skimmers, similar to weir skimmers, but which use a power source to actively remove oil;

centrifugal skimmers in which a power source creates a vortex to drain off oil;

submersion skimmers that force the oil below the water level and then use its buoyant properties to collect it; and

oleophilic skimmers that collect oil on moving oleophilic material (ropes, disks, belts, etc.) and mechanically squeeze or scrape the oil into collection tanks.

Each skimmer type has its advantages and disadvantages, although the efficiency of each model depends on several parameters, including oil thickness, oil viscosity, sea state, and storage capability. Each type of skimmer is best suited for a particular situation; no skimmer is effective in all conditions. For example, in cold water the increased viscosity of heavy oil reduces the effectiveness of many weir skimmers and can prevent effective operation of vacuum systems and pumps. Oleophilic skimmers and pumps work quite well for high viscosity oils, providing the oil will flow.

Available oil skimmers generally are rated as performing “good” in sea state 1 (significant wave height to 1 foot). In a sea state of 2 (significant wave height to 2.9 feet), performance falls off with the majority of skimmers being rated as “fair.” In a sea state of 3 (significant wave height to 4.9 feet), the vast majority of skimmers are rated as “fair” or “poor.” Skimmers are needed that are capable of operating in the “good” range in higher sea states. This would mean that skimmers would pick up a larger percentage of the oil in the area covered by the skimmer and would operate at higher speeds, thus enabling the skimmer to cover a larger area in a given amount of time. If a skimmer can pick up a larger volume of oil, there will be less oil remaining that could potentially damage environmentally sensitive areas.

The overall efficiency of a skimmer system is dependent upon the effectiveness of individual components of the system which includes containment (boom systems), recovery of spilled oil (skimmers, sorbents, and pumps), separation of oil/water mixtures, and transportation of the mixture to receptacles.

Pumps are necessary in all phases of oil spill cleanup operations including collecting oil from containment devices and transferring it to a vessel or facility for separation, reprocessing, storage, or disposal.

Sorbents are those materials that recover oil either by absorption or adsorption. In absorption, oil penetrates the solid structure of the absorbent material's fibers or particles, which then swell in size to accommodate the oil. In adsorption, oil adheres to the surface of the adsorbent material but does not penetrate the fibers or the particles themselves. Sorbent materials are generally classified by their composition: (1) natural organic products, such as hay, peat moss, straw, or wood pulp; (2) mineral compounds, such as ash, perlite, or vermiculite; (3) synthetic products, such as polyethylene, polypropylene, or polystyrene. Sorbents are usually marketed in particulate form as booms, pillows, rolls, or sheets. Synthetic products are generally preferred over natural sorbents because they are able to remove more oil while taking on less water. For this reason they take up less storage space and pose less of a disposal problem.

As previously stated, winds and sea state have significant effects on the performance of oil spill equipment. In general, maximum wind speeds of 15-20 knots pose the upper limit for dynamic upwind recovery, and effective recovery in sea states of over 3-4 feet is essentially undocumented. The period of the waves is also important. When an increase in winds produces short-period localized seas, the efficiency of containment and cleanup devices decreases because choppy waves tend to swamp or break over the equipment. Large rolling waves or swells have long periods and present fewer problems because the equipment can follow the waves' contours.

Portable skimmers come in various sizes and capacities, from small, drum-mounted rope mop models with a maximum recovery capacity of 15 to 30 barrels per hour, to large skid-mounted disk skimmers with recovery capacities of 200 barrels or more per hour. Portable systems are commonly located at drilling facilities as immediate spill-response skimmers and stockpiled by cooperatives for use in conjunction with shoreline cleanup and for use in bays and other areas where oil may collect.

There are a number of larger or high-volume skimmer and boom systems that have been use with varying degrees of success throughout the world. The manufacturers of these skimmers and boom systems have made varying claims about the effectiveness of their products. The MMS believes that additional testing should be done to verify the effectiveness of various skimming systems claiming effective recovery in sea states over 3-4 feet. The following represent examples of skimmer and boom systems and the effectiveness of these systems as rated by their manufacturers:

> **The Spilt Oil Containment Kit (SOCK) Skimmer**: This is a modified bag suction/weir skimmer that is 43 feet long, 25 feet wide, and includes a 200-barrel storage container. It was designed to be transported by a C-130 aircraft, and was used during the 1979 *Ixtoc* spill in the Gulf of Campeche. During tests recovery efficiencies of up to 90 percent were obtained under optimal conditions with recovery rates of 200 to 250 barrels per hour. The manufacturer reports that no performance degradation was observed in seas up to 4 feet, and good performance can be expected in seas up to 8 feet.
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> **The Halliburton Fast Response Unit (FRU)**: This is a vessel of opportunity skimming system that is deployed alongside a vessel by use of an outrigger. It is a floating weir skimming system connected to two short lengths of boom that can sweep open to 30 feet. It contains a 90-barrel storage tank for recovered fluid. Tests have indicated that throughput efficiencies ran as high as 100 percent for speeds of 1.25 knots, with an oil recovery rate of 293 barrels of oil in a slick that was 2 mm thick. In severe harbor-chop conditions of 2 feet, throughput efficiencies dropped to 70 percent. The manufacturer claims that the system is designed to be operated in seas up to 5 feet.
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> **The Halliburton Open Ocean Skimming Barrier**: This system is air transportable and is essentially a boom towed in a "U" configuration between two vessels of opportunity using a weir skimmer at the apex of the oil recovery boom. The weir

skimmer is identical to the skimmer in the FRU described above. The skimming barrier uses about 670 feet of Kepner Open Ocean Boom that is bridled near the apex. With an opening of approximately 150 feet, the system is capable of encountering 665.5 barrels of oil per hour when towed through a 1-mm thick slick at a speed of 1.25 knots. Halliburton claims that the maximum recovery rate of the system is approximately 600 barrels per hour.

The High-Volume Open Sea Skimmer System (HOSS) barge consists of a skimming system built into a specially designed 174-foot barge. The barge is operated by Clean Gulf Associates in the Gulf of Mexico and is maintained at the Grand Isle base in Coastal Louisiana because of its close proximity to a large number of oil and gas production operations. About 1,000 feet of boom is stored on two sides of the barge and is launched off the stern by means of a trolley running down ramps installed in the hull. Mounted in slots at the stern are four oleophilic belt skimmers, each followed by a weir skimmer. The HOSS barge is designed to skim extensive long-duration spills where chasing after slicks is not required and to provide offshore operational support for spill recovery. The system must be towed to a spill site. The Clean Gulf Associates claims that the HOSS barge is capable of working in up to 6-foot waves with boom and 7-foot waves without boom.

The Norwegian Oil Trawl has been tested on several occasions with oil in the North Sea. In one offshore test in seas of 3.4 to 6.6 feet and 17-knot winds, the system recovered 195 barrels of a 267.4-barrel spill, or 73 percent of the oil. The manufacturer rates the system as operational in winds up to 20 knots with 11.5-foot waves.

Due to the problems of equipment and manpower coordination inherent in an oil spill responses, skimming systems deployed from single, independent vessels are an attractive means of recovering spilled oil offshore. Large sweep systems are advantageous on large, unified slicks; however, a vessel of opportunity skimming system can be deployed more quickly, is more maneuverable (for skimming windrows of oil, for example), and usually requires only one vessel. Operations of single-vessel systems are primarily limited by the deployment and retrieval of the skimming system in rough conditions rather than by boom or barrier performance in the waves.

Skimmers can be rated based on amount of oil collected and performance in adverse sea states. The quality of oil skimmers varies from one piece of equipment to another. There is a need for an objective procedure to evaluate booms and skimmers. As explained above, no standards exist for the performance of oil spill response equipment, which is why MMS is working to reopen the OHMSETT facility in New Jersey to test new and existing devices.

New and innovative designs for skimmer operations in ice conditions should be evaluated and improved. A joint MMS-Environment Canada research project is underway to evaluate a barrier/skimmer designed for ice operations.

e. In Situ Burning

In situ burning is becoming a more widely accepted response measure for offshore spills. Industry has almost unanimously adopted in situ burning as a primary technique for major oil spills that occur during broken-ice conditions and for oil trapped under and within the ice. In situ burning also has been demonstrated to be a very useful response tool in open-water conditions when used in conjunction with a fire resistant boom. Numerous burn tests have been done in the lab, in test tanks, and in the field (including one during the second day of the *Exxon Valdez* spill cleanup operation), which demonstrate the feasibility and effectiveness of this technique.

In situ burning greatly reduces the need for recovery, storage, transportation, and disposal of a large percentage of the spilled oil. Successful in situ burning depends on vaporizing oil and raising its temperature for oxygen to react in a combustion process. Ideally, this is a self-perpetuating reaction. Once initiated, the combustion reaction produces enough heat to continue vaporizing the oil. The water below the oil slick acts as a heat sink that constantly draws heat away from the oil slick. When the temperature of the oil drops to where it is no longer being vaporized, the combustion reaction ends.

The temperature at which vaporization occurs and the combustion process begins varies according to the physical and chemical properties of the crude oil being burned. Many crudes, however, contain volatile light ends that enable combustion to begin below 50 degrees Centigrade (122° F). As the oil weathers, the more volatile light ends are lost, concentrating the more stable heavy ends and raising the ignition temperature. If the oil is spread thin or emulsified, it may be difficult or impossible to conduct effective in situ burning operations. Generally, oil must be at least one tenth of an inch thick on the water surface to sustain burning.

For most fresh oils, once a slick is burning it will continue to burn until the slick becomes too thin to sustain burning. Some oil residue remains in the water from all burns, as the flame is quenched by heat losses to the water surface when the oil layer is thin. Burn efficiencies of greater than 90 percent have been easily obtained in test burns.

During the *Exxon Valdez* spill, a test burn using the 3M fire resistant boom was conducted 2 days following the spill. In this test, an estimated 15,000 to 30,000 gallons of North Slope crude oil were burned in approximately 75 minutes with an estimated efficiency of 98 percent. The volume elimination rate for this test using a single 500-foot boom was estimated to be between 350 and 500 gallons per minute (500-1,000 barrels per hour) (Allen, 1990).

Thus, in situ burning using fire resistant booms to confine oil slicks and maintain adequate slick thickness to sustain burning can be a very useful and effective tool for spill response operations provided that the oil is not highly emulsified and in situ burning is conducted within the first few days of the spill.

While the effectiveness of in situ burning has been proven in the laboratory and in the field, there still remain some unanswered questions regarding the tradeoff of air quality versus potential contamination to a shoreline or a biologically sensitive area from a slick. The MMS, in conjunction with Environment Canada and the American Petroleum Institute, are planning a number of large-scale burn tests over the next several years to better quantify air quality data concerning burn processes. For remote offshore areas, it is unlikely that air quality issues would prohibit the use of in situ burning.

f. Chemicals and Dispersants

Chemical dispersants may potentially be used as an oil-spill mitigation tool. Dispersant formulations have changed in recent years in attempts to develop more effective and less toxic products. These so-called second-generation dispersants, introduced in the late 1970's, are being manufactured today.

The key components of chemical dispersants are surface-active agents (surfactants), which are molecules that have both water-soluble (hydrophilic)and oil-soluble (hydrophobic) ends. These molecules, when applied to an oil spill, orient themselves at the oil-water interface such that the hydrophilic ends of the molecules are in the water and the hydrophobic ends are in the oil. The result is a reduction of interfacial tension between the oil and water. This action reduces the cohesiveness of the oil slick, and with wave action, finely dispersed oil droplets are formed in the near-surface water. The hydrophilic surfactant groups prevent droplets from recoalescing.

Any decision to use dispersants must be made soon after a spill occurs. Weathering of oil will increase oil viscosity and decrease the capability of chemicals to disperse the oil. Factors to be considered in making this decision are oil type and properties, environmental conditions, the availability of dispersant and application equipment, and the probable fate of oil without the treatment. Highly viscous oils, oils with pour points near or above ambient temperature, and oils with a high wax or asphaltene content may not be amenable to dispersant treatment.

Dispersants may be applied by boat or aircraft. Boat application is limited to small spills or those within a few miles of shore. Aerial spraying is the preferred method because it offers rapid response, coverage of large areas in a short time, good control of treatment rates, optimum use of dispersants, and much better evaluation of treatment results than is possible from boats. Regardless of the method used, dispersants are generally applied only on oil slicks that are 0.25 mm thick or less (a 0.25 mm thick slick contains over 4,000 barrels of oil per square mile).

The dispersant must penetrate the oil to reach the oil-water interface. The proper dosage of dispersant must be used to attain the maximum reduction of interfacial tension. (About (about 3,200 gallons per square mile [or 5 gallons per acre] is an average amount, depending on the dispersant and the oil type). Finally some form of energy (e.g., wind, wave, or mechanical) must be applied to the oil/water interface to cause the dispersion of oil in the upper part of the water column. Most dispersants are not recommended for use on spills on very calm waters, although newer types of dispersants require very little mixing energy. Some dispersants are formulated for use on marine (saltwater) spills only.

Dispersant use in the Gulf of Mexico is controversial and has not yet been fully accepted by the five Gulf States, which, along with USEPA, have approval authority regarding the use of dispersants in waters off their shores. The States, however, by their participation in the RRT's and Dispersant Working Groups (DWG's), are reviewing relevant data with an eye to approving dispersant use under certain specific conditions. The MMS also participates in the DWG's and is considering several studies to obtain more data on dispersant effectiveness under field conditions.

The National Research Council (NRC) of the National Academy of Sciences has addressed the effects of dispersants in its review, "Using Oil Spill Dispersants on the Sea." The study addressed two questions about the use of dispersants: (1) Do they do any good? and (2) do they do any harm (NRC, 1989)?

> It is not easy to answer whether dispersants do any good. In a few carefully planned, monitored, and documented field tests and laboratory tests, several dispersants have been shown to be effective (for some oils that were dispersible) in that they removed a major part of the oil from the water surface. However, results in other field tests and accidental spills have shown dispersants to have low effectiveness. The interaction of various physical and chemical processes involved in oil dispersion are not well understood and further studies are needed. In 1986, the MMS with Environment Canada began to develop standard evaluation protocols for chemical treating agents including dispersants. These protocols to measure the laboratory effectiveness with various oils have been developed, and over 14,000 evaluations have been conducted. Clearly there is room for significant improvements for dispersant efficiencies.
>
> Concern that chemical dispersants could be harmful to marine life has led to considerable caution in authorizing their use in actual spill situations. Laboratory studies of dispersants currently in use have shown that their acute lethal toxicities are usually lower than crude oils and refined oil products. However, a wide range of sublethal effects of dispersed oil has been observed in the laboratory. These occur in most cases at concentrations comparable to or higher than those expected in the water column during treatment (1 to 10 ppm), but seldom at concentrations less than those found several hours after treatment of an oil slick (less than 1 ppm). The times of exposure in the laboratory (24 to 96 hours) are much longer than predicted exposures during slick dispersal in the open sea (1 to 3 hours), and the effects would

> be expected to be correspondingly less in the field. Laboratory bioassays have shown that acute toxicity of dispersed oil generally does not reside in the dispersant, but in the more toxic fractions of the oil. Dispersed and untreated oil show the same acute toxicity. The immediate ecological impact of dispersed oil varies. In open waters, organisms on the surface will be less affected by dispersed oil than by an oil slick, but organisms in the water column, particularly in the upper layers, will experience greater exposure to oil components if the oil is dispersed. In shallow habitats with poor water circulation, benthic organisms will be more immediately affected by dispersed oil. Although some immediate biological effects of dispersed oil may be greater than for untreated oil, long-term effects on most habitats, such as mangroves, are less, and the habitat recovers faster if the oil is dispersed before it reaches that area.

The NRC made several recommendations regarding future studies. It also recommended that dispersants be considered as a potential first-response option to oil spills, along with other response options.

The RRT's in Gulf of Mexico Standard Federal Regions IV and VI have established DWG's to advise the RRT's on dispersant use. The Region VI DWG has developed a Dispersant Use Plan, which has been adopted by the RRT and incorporated into the Region VI RCP. Under the plan, the Region VI RRT recently approved a USCG request for pre-authorization to use dispersants at the Louisiana Offshore Oil Port and is now considering a similar request by the State of Louisiana. The Region IV DWG is also proceeding to develop a Dispersant Use Plan. The use of dispersants may eventually be considered under appropriate conditions, but at the present time the individual States, which must concur in any decision to use dispersants, are reluctant to approve such use until ambiguities regarding the toxicity of dispersants and dispersed oil are resolved.

In the Alaska OCS Region, guidelines for the use of dispersants have been developed for Prince William Sound and Cook Inlet. These guidelines were developed to provide the USCG with "preapproved use" criteria for each specific area and have been fully endorsed by the Alaska RRT. Other areas offshore Alaska are currently being assessed for developing dispersant use guidelines.

More knowledge is needed concerning when dispersants can be used and what the likely environmental consequences will be. Additional research is necessary to determine when dispersants can be used safely and effectively and to develop methods for their use. There is evidence that dispersants may in some circumstances inhibit the effective operation of cleanup systems. For example, the addition of chemical dispersants will generally reduce the adhesive properties of oil. This can adversely affect the use of oleophilic skimmers during cleanup operations. On the other hand, developing environmentally acceptable methods for use of dispersants could potentially provide a mechanism for dealing with far greater volumes of spilled oil than can be done with mechanical systems and for dealing with oil spills in oceans where sea state precludes use of mechanical devices. This information must be made available to people with authority to make a decision under an emergency situation.

In summary, dispersants have not gained wide acceptance for spill response because of biological concerns and because dispersant effectiveness has not been widely demonstrated in field trials or actual spill events. Chemical dispersion does not remove the oil from the environment. It breaks up the oil allowing it to be mixed with the underlying water. Dispersed oil ultimately will be biodegraded, taken up by marine organisms, or incorporated into bottom sediments. In most offshore applications, dispersant effectiveness has been estimated to be less than 25 percent. Dispersants cannot be applied without approval in accordance with the NCP, 40 CFR 300.

g. Bioremediation

Bioremediation, which is a new term for biodegradation, represents a resurrection of an old technique involving accelerated metabolic breakdown of spilled oil by microbes. This response strategy has routinely resulted in accelerating removal of oil from beaches at a rate of approximately 10 percent over a 1 to 2-year timeframe depending upon temperature.

This technique was used extensively on beaches in Prince William Sound, Alaska, and at sea following the *Mega Borg* spill in the Gulf of Mexico. Exxon, the State of Alaska, and USEPA are all in general agreement that bioremediation is an effective tool for shoreline cleanup. The USEPA is conducting further research in the laboratory and is interested in developing evaluation procedures for rating performance of various microbial combinations, fertilizers, and fertilizer and microbe combinations. Prior to 1989, MMS has co-funded with Environment Canada attempts to develop these test procedures with little success. Data were inconclusive.

h. Coastal Cleanup Techniques

When a spill contacts a coastline, several techniques can be used depending on the type and quantity of oil, the nature of the coast, the depth of oil penetration into sediments, the accessibility and trafficability of the shoreline, and the possible environmental damage to the shoreline of the treatment under consideration.

For many tidal marsh areas, attempts at cleanup (removal of oil by mechanical means) can do more harm than good. In some instances bioremediation may help nature restore an oiled marsh. The most common response measure for marsh areas is to place protective booms near the entrances of tidal marshes to prevent oil from entering these areas. The MMS believes that the best alternative is to require use the most reliable technologies to prevent spills in the first place and to require lessees to have adequate spill-response capability to recover as much oil as possible in case the best efforts to prevent a spill fail.

DIRECT SUCTION: The effectiveness of direct suction depends upon thick accumulations of oil and beach type. This technique can be used if oil has pooled in low spots or areas of poor drainage. Direct suction can be accomplished with pumps, hoses, and storage containers. Recovered oil can be stored in metal storage containers, natural depressions lined with an impervious material, or vacuum trucks equipped with pumps. Direct suction also can be applied to spills in porous soils such as sand or silt. A trench can be cut into the soil for oil collection so that hoses and pumps can be applied.

MANUAL REMOVAL: Manual removal is preferred for cases in which oil contamination is low or sporadic, or where penetration of oil into the soil has been limited. Therefore, it should not be used for marshes and tidally flooded mud flats. Manual recovery involves use of hand tools such as rakes, shovels, buckets, pickaxes, brush cutters, scythes, and power tools. Oil-contaminated material is collected and put into heavy-duty plastic or burlap bags for disposal.

Due to logistical constraints or to access constraints placed on heavy equipment in some areas, manual recovery may be the only cleanup technique possible for some shoreline spills. This type of response permits selective removal of contaminated sediment and vegetation. However, it is inefficient and labor intensive. The effectiveness of a manual response is directly related to the amount of time, labor, and money that can be committed.

SORBENTS: Sorbent pads, booms, or rolls are often used as part of a manual response, or they can be used in conjunction with other techniques. Small, isolated pools of oil on the sediments or in nearshore waters can be removed using sorbents. Once the sorbent materials have become soaked with oil, they can be removed manually or they may be burned.

HEAVY EQUIPMENT: Use of heavy equipment requires either the availability of roads or a means of air-lifting or barging the equipment to contaminated areas. Only certain soil types, such as sand or rocky soil, can support heavy equipment. Graders, scrapers, loaders, bulldozers, and backhoes are equipment that may be employed.

FLUSHING OR WASHING: Flushing or washing operations are extremely labor intensive and may damage the sediment by erosion or by driving oil further into the sediment. Thus, care must be used in employing these techniques. Low-pressure flushing or washing can be used for cleaning light oils, such as fuel oil, from lightly contaminated sediments or vegetation. Water is pumped from the ocean and is flushed over the sediment or vegetation to remove the oil. The flushed oil is trapped downstream or downslope in a manmade trench or in a boomed-off area of the ocean close to shore. The trapped oil may be removed by direct suction, skimming, burning, or sorbent pads. High-pressure flushing may be used for rocky coastlines where there is not much risk of either soil erosion or driving oil deeper into coastal sediments.

STEAM CLEANING AND SANDBLASTING: Steam cleaning and sandblasting are techniques that can be used to remove oil from rocks, boulders, and manmade structures. High-pressure jets of steam or sand are used to physically remove oil from contaminated surfaces. Such high-pressure jets can severely erode sediment or damage uncontaminated flora or fauna if care is not used in their use.

NATURAL DISPERSION: Natural dispersion is sometimes the only possible alternative for shoreline cleanup when logistics or weather conditions preclude response efforts. Contaminated shorelines adjacent to high-energy ocean environments—particularly sand, gravel, or cobble beaches—can be effectively cleaned by natural dispersion.

Table D-1 provides a summary and ratings of effectiveness for cleanup methods for various habitats, as presented by Continental Shelf Associates. The MMS does not necessarily agree with all of these ratings. For example, under “Open Waters—Offshore/Nearshore,” Table D-1 indicates that “Dispersants” are a “Preferred” method of cleanup. As noted above in this appendix, dispersants have not gained wide acceptance for spill response because of biological concerns and because dispersant effectiveness has not been widely demonstrated in field trials or actual spill events. Therefore, MMS would not agree that dispersants are a “preferred” method of dealing with a spill in open waters.

4. Location of Oil Spill Containment and Cleanup Equipment and Response Times

As discussed above, response times established by MMS-USCG guidelines are 6 to 12 hours for initial recovery actions, depending upon location and the weather. For extraordinary spills, additional equipment must be available within 48 hours. For the Alaska OCS operating areas, spill response containment and cleanup equipment is maintained onsite and at nearby temporary bases.

a. Marine Spill Response Corporation (MSRC) and the Marine Preservation Association (MPA)

In September 1990, establishment of the MSRC and the MPA was formally announced. The MSRC was set up to become the world’s largest oil spill cleanup organization, and, at the time of announcement, it was estimated that it would cost $800 million over the succeeding 5 years to cover capital, operational, and research and development costs for the corporation. Funding for MSRC is provided through the MPA which is a separate organization of owners, shippers, and receivers of oil. Both organizations are not-for-profit entities, and each is independent of the other.

Companies who join the MPA have the right to enter into a contract with the MSRC to be their designated cleanup organization. Dues are paid to the MPA based on a per barrel fee for oil that is transported during the year. These fees fund the capitalization and operational costs of the response corporation. In addition to MPA membership dues, if MSRC responds to a spill, then the spiller is responsible for payment of the actual cleanup costs.

The MSRC and MPA grew out of the efforts of an American Petroleum Institute task force that was set up immediately following the *Exxon Valdez* disaster. The task force investigated existing resources for responding to other catastrophic oil spills similar to the *Exxon Valdez* and concluded that the capability did not exist, either in industry or government, to successfully contain and remove a spill of such magnitude. As a result of the task force recommendations and enactment of the OPA, about 20 oil companies began work on a means of responding to catastrophic oil spills. They agreed upon formation of the MSRC and MPA.

Method \ Habitats	Open Waters-Offshore/Nearshore	Open Waters-Enclosed Bays & Harbors	Soft Bottom-Subtidal	Seagrass Beds (Intertidal)	Seagrass Beds (Wade Zone Subtidal)	Rky Subtidal-Open Md-Bot. & Rocky Rfs	Exposed Rock Intertidal	Sheltered Rocky Intertidal	Sand Beaches (Exposed)	Sandy Beaches (Sheltered)	Sheltered Tidal Flats	Gravel/Cobble Beach (Exposed)	Sheltered Gravel Beaches	Sheltered Cobble Beaches	Coral Reefs (lagoons)	Coral Reefs (Deep Fore, Flats, Crests)	Mangrove Forests	Salt Marshes
Beach Cleaning Machines									P	P								
Booms/Skimmers	P	P					V	P	A		P				P		P	P
Burial				A					A	A	A	A	A					
Burning	NA	NA					NA	NA		A			A		A	A	A	A
Dispersants	P	V		NA	NA		V	NA	V	A	NA	P	A	V	NA	V	P	V
Earth Barriers																		
Herding	V	V															V	V
High Pressure Flushing				A		NA	NA	NA	A	A	A	NA	A	NA	V		NA	A
Low Pressure Flushing				V	V		V	V		V	P	P	V	R	P	V	P	P
Management (Drainage)																	P	P
Manual Removal			V	NA	NA	NA	V	V	P	P	V	NA	P	NA			V	A
Natural Cleansing	P	P	P	P	P	PV	P	NA	P	V	P	P	NA	P		P	V	P
Sand Blasting							A					NA		A				
Sinking Agents	A	A																
Sorbents	V	V		NA	V	V	V	V	V	V	P	NA	V	V	V	NA	V	V
Steam Cleaning							A	A				A		A				A
Substrate Displacement				A					P	A	A	A		A				
Substrate Removal			NA	A			A	A	P	NA	A	A	NA	A			A	A
Vacuum Pumping	V	V	NA	A	A	V	V	V	P	P	V		P		P	V	V	V
Vegetation Cropping				A	NA		NA	NA										NA

P = Preferred
V = Viable
NA= Not Advisable
A = Avoid

Source: CSA, 1989.

Table D-1. **Summary and Ratings of Effectiveness for Cleanup Methods by Habitat**

The MSRC is headquartered in Washington, D.C., has 5 regional response centers, and is scheduled to become operational in 1993. When fully operational, each center will have the capability of responding to a spill of up to 200,000 barrels of oil, nearly equal to the *Exxon Valdez* spill. In addition to the regional response centers, each region will have from 3 to 6 pre-staging areas (a total of 27 facilities including the 5 regional response centers). The proposed MSRC regional centers and pre-staging areas will be designed to ensure a quick response to a large spill in U.S. coastal and tidal waters, out to the limits of the U.S. 200-mile Exclusive Economic Zone.

The MSRC, as a matter of policy, will not compete with existing organizations already established for responding to oil spills. The MSRC regional centers and pre-staging areas will be located as follows:

(1) Northeast Region in New York-New Jersey metropolitan area, with pre-staging areas in Portland, ME; Boston, MA; Narragansett Bay, RI; Delaware Bay; Chesapeake Bay; and Norfolk, VA.

(2) Southeast Region in Miami, FL, with pre-staging areas in Wilmington, NC; Savannah, GA; Jacksonville, FL; Tampa, FL; and in the U.S. Virgin Islands.

(3) Gulf Region in Lake Charles, LA, near the Texas border, with pre-staging areas in Mobile, AL; Venice, LA; Galveston, TX; and Corpus Christi, TX.

(4) Southwest Region in Port Hueneme, CA, north of Los Angeles on the Santa Barbara Channel, with pre-staging areas in San Diego, CA; Los Angeles/Long Beach, CA; San Francisco, CA; and Oahu, HI.

(5) Northwest Region in the Seattle, WA, area with pre-staging areas in Astoria, OR; Bellingham, WA; and Port Angeles, WA.

The MSRC will employ about 400 full-time employees and initially will require about $315 million worth of equipment including vessels, trucks, booms, skimmers, dispersants, and wildlife and shoreline rehabilitation tools to contain, mitigate, and clean up spills.

Although MSRC is being developed primarily to fill the current gap in response capability for major spills, it will be available to assist with smaller spills whenever the USCG takes over direction of a spill cleanup, determines that local response capabilities are inadequate, and then directs the MSRC to provide assistance. The MSRC is intended to augment rather than replace local spill cooperatives and response contractors. Also, MSRC will be relying on subcontracts with local spill response organizations to supplement MSRC capability during major spill responses.

b. Gulf of Mexico Region

The Gulf of Mexico OCS offshore Louisiana is where over 90 percent of all OCS oil and gas has been produced so far. Throughout the Central and Western Gulf of Mexico OCS there are over 3,700 production platforms. The 6- to 12-hour range for response times called for in the MMS-USCG guidelines is not flexible enough to cover the wide variation in the distance of the leased areas in the Gulf to the shoreline or to the nine spill equipment bases designated by Clean Gulf Associates, the industry cooperative established in the Gulf to respond to oil spills. It should be noted, however, that an oil spill at over 60 miles from shore would not normally pose an immediate threat to coastlines in the Gulf, primarily because of two reasons. First, prevailing winds and currents in the Gulf do not move spills directly toward the shorelines. Second, the greater the distance a facility is from the shore, the greater the time available before a shoreline would be affected, and the greater time available for the generally light Gulf crudes to be naturally dispersed. Nevertheless, response to a spill should be undertaken as soon as possible with all due concern for safety and practicality.

A study of the projected response times submitted by Gulf of Mexico OCS operators determined that most facilities located more than 60 miles from an onshore equipment base have response times greater than 12 hours. These response times are based on an estimated 4 hours for the procurement and mobilization of personnel and a vessel to a base, an estimated 2 hours to load the equipment onto the support vessel, an estimate that the vessel would travel at 10 mph in open water, and an estimated channel run time. Efforts are currently underway by Clean Gulf Associates to establish and equip four identified vessels and stage them offshore at strategic locations to reduce the initial response times for certain areas of the Gulf of Mexico. Two of these vessels are already in service.

The Clean Gulf Associates onshore bases are located as follows: Florida—Panama City; Alabama—Theodore; Louisiana—Houma, Intracoastal City, Cameron, Grand Isle, and Venice; Texas—Galveston (Texas City), and Port Aransas (Fulton).

Although OSCP's for the Gulf of Mexico do not specify response times, the supplemental oil-spill information submitted for Exploration Plans and Development Operations Coordination Documents does provide response times for operations on a particular lease. First response to a drilling-related spill in the Gulf would generally be made using Clean Gulf Associates equipment. Operators are responsible for supplying their own vessels, cranes, and personnel when using this equipment.

A large number of operators in the Gulf of Mexico propose the use of contract personnel to load and operate Clean Gulf Associates equipment. This typically involves a "no fee" type of contract with one or more of these companies to provide spill response on a 24-hour basis if they are available at the time of a spill. Because these companies are not located in close proximity to all of Clean Gulf Associates spill equipment bases, the delivery of the contract personnel to a spill base for loadout could increase a projected response time. A 6-hour timeframe to mobilize personnel and equipment has been identified in some instances.

Vessel procurement has also been identified by many operators as one of the most limiting factors in reducing response times in the Gulf of Mexico. Procurement times of over 12 hours have been projected in some instances. Many operators have requested a spill equipment base nearer their onshore support base rather than a base closer to their lease to ensure that a vessel could be procured within a reasonable time. Most companies prefer to rely upon vessels they have already contracted with as opposed to attempting to contract or borrow a vessel from another company at the time of a spill. Other problems encountered regarding vessel procurement are the availability of large vessels, from 160 to 180 feet in length, that would be needed to respond to spills in deep-water blocks and the limited number of spill equipment base locations that could accommodate large vessels. These factors could significantly increase an already lengthy response time to a deep-water area.

c. Pacific Region

In the Pacific Region there are 23 fixed platforms. Operators in the Pacific Region are required to keep sufficient equipment on or near the platform to enable them to initiate containment activities immediately. For a second level response, equipment at the platform is supplemented by equipment kept onshore and operated by oil spill cooperatives formed by the lessees and operators. For example, Clean Seas has pre-staged equipment located at Morro Bay, Avila Bay, Santa Barbara Harbor, the Carpinteria Yard, and in the Ventura/Port Hueneme area. Various types of response equipment similar to the equipment described in this document are stored at these locations. The three major cooperatives also have at least six dedicated ocean-going vessels with containment and recovery equipment for oil spill response. These cooperatives also jointly maintain a fixed-wing DC-4 aircraft based at Mesa, Arizona, to apply dispersants over a large area.

If the Federal OSC so requests, the Navy and the USCG can provide additional oil spill response equipment and personnel located at Stockton and at Hamilton Air Force Base in northern California. Also, as described above, the MSRC is establishing a Southwest Region Response Center at Port Hueneme on the Santa Barbara Channel. Equipment from this center may be used for response to a spill from OCS exploration and production operations if so directed by the USCG's Federal OSC.

Numerous public comments have been received expressing concern about oil spills from possible OCS development along the Central California coast. Oil spill risk to the Central California coast from OCS operations is low for several reasons. First, there are no OCS operations along the Central California coast to create a spill risk, nor are any such operations expected as a consequence of the proposed lease sale schedule. Oil spill risks from existing and potential OCS operations more than 100 miles to the south are very low. If oil and gas exploration and development activities occur along the Central California coast, the industry must be able to respond to a spill within the 6 to 12 hour guideline established by USCG and MMS. To comply with that guideline, the oil industry would have to establish equipment depots in the area and station response vessels in nearby harbors. Until OCS activity is permitted offshore Central California, there is no incentive to locate cleanup equipment or supplies in the area.

In the meantime, however, the three oil spill response cooperatives on the California coast—Clean Bay, Clean Seas, and Clean Coastal Waters—have formally agreed to provide each other response assistance within the boundaries established by State and Federal regulatory authorities. These cooperatives have also been acquiring new equipment to supplement their existing inventories.

d. Alaska Region

Regarding the *Exxon Valdez* spill, several commenters have observed that a tanker spill originating in one portion of the Alaska OCS can have effects over a wide area. The MMS agrees with this observation. Currently there is no production or tankering of oil from OCS leases offshore Alaska and, except for Cook Inlet and Prince William Sound, the current oil-spill-response infrastructure is not intended to respond to spills from tankers. Before any OCS development activity could be allowed, a Development and Production Plan and an OSCP would be required to be submitted, reviewed, and approved. The Development and Production Plan would have to describe any proposed tanker activity. The MMS anticipates that if tanker activity were proposed in currently undeveloped areas, existing OSCP's and response capabilities would be substantially enhanced and that spill-response cooperatives would be created by the lessees and strategically located to respond to tanker spills.

The activity in the Alaska Region varies significantly from year to year and from location to location. Accordingly, the response equipment in place to respond to spills resulting from activity in the Alaska OCS also varies in response to changes in location of activity. The MMS Alaska OCS Region requires any lessee conducting exploratory drilling operations to have an initial onsite spill-recovery capability of at least 1,000-barrels per day and the ability to mobilize additional equipment and personnel for a larger spill, if necessary. Requirements regarding the type, location, and quantity of equipment is based upon estimates of the maximum spill size and trajectory analysis as presented in the risk analysis of the OSCP.

Two oil spill response organizations have been established by the petroleum industry for offshore Alaska: Alaska Clean Seas and Cook Inlet Spill Prevention and Response, Inc. In addition, Alyeska Pipeline Service Company maintains a major spill-response organization for its pipeline and marine terminal operations; however, this equipment is dedicated for response to tanker spills in Prince William Sound, so it may not be available for use in the event of a spill from OCS operations. Many operators in Alaska also maintain their own spill-response personnel and equipment for use as the primary spill response for their operations offshore Alaska.

Because of the remoteness of drilling sites from existing support facilities in the Alaska OCS Region, oil spill response equipment is normally kept onsite. For example, in the Chukchi Sea, oil spill response equipment is maintained on the drillship, on a large nearby icebreaker/support ship, or on a designated oil spill response barge stationed near the drilling site during the drilling season (approximately July to October). In the case of the barge, the equipment was shipped to Seattle, Washington, for winter storage at the end of the drilling season. (However, the Helitorch for use in in situ burn operations was returned to the ABSORB warehouse at Deadhorse, Alaska.) For Chukchi Sea operations, only onsite equipment or equipment transported by helicopter from Point Belcher or Barrow can meet deployment guidelines. If carried by helicopter and weather permitting, spill cleanup equipment from Barrow can reach any point in the Chukchi Sea Planning Area within 3 to 6 hours.

The limited geographic and temporal presence of open water and slow vessel speeds in broken ice preclude timely spill equipment transport by sea. For larger spills exceeding the local response capability, additional equipment is available from a number of sources. In good weather, equipment transported by plane or helicopter from Point Belcher or Barrow can satisfy the equipment deployment criteria set by MMS for 6-to-12 and 48-hour responses. Additional equipment from Alaska, Canada, or the lower 48 States also could be airlifted to Barrow or Point Belcher to meet the 48-hour guideline. Other slower-arriving equipment would still be useful in a major spill; but the MMS does not consider such equipment in judging whether OSCP's meet the MMS 48-hour response criteria. (Estimated response times from other onshore oil spill response bases would be as follows: Deadhorse, 3 to 6 hours (by air); Dutch Harbor, 2 weeks (by sea); and Anchorage, 5 to 8 hours (by air).) Cleanup could continue as long as necessary, without any timeframe or deadline. For example, a winter spill in pack ice might require initial onsite response followed by further oil cleanup in late spring or summer when the oil melts out or pools on top of the ice.

Onshore support facilities for oil spill response on Beaufort Sea leases are located primarily at Deadhorse. Equipment stored at Deadhorse or airlifted to Deadhorse is capable of meeting the criteria of the 48-hour response time for major spills. Once spill cleanup equipment reaches Deadhorse or Prudhoe Bay, it can be transported relatively quickly to a spill site only if it can be carried by helicopter, weather permitting. Helicopters operating out of Deadhorse or Prudhoe Bay can reach any point in the Beaufort Sea Planning Area within 3 hours.

For North Aleutian Basin and Bering Sea leases, onshore response bases could be located on St. Paul Island and at Dutch Harbor and Port Moller along the Aleutian chain. From Point Moller, most North Aleutian Basin leases can be reached within 12 hours by sea. In any event, the actual location of spill-response equipment will depend upon the proximity of each lease to an onshore staging area and the risk analysis provided in the OSCP.

e. Atlantic Region

Currently, the only OCS oil and gas activity proposed on the Atlantic OCS is Mobil Oil's exploratory well on the Manteo prospect, about 45 miles northeast of Cape Hatteras, North Carolina. Mobil proposes to use Morehead City as its onshore staging point for oil spill cleanup equipment. Additional cleanup equipment would be stored at Oregon Inlet. Since Morehead City is about 240 miles from the proposed drilling site, Mobil plans to have a dedicated standby vessel at the drill site to enable them to meet the required response time of 6 to 12 hours for deployment. The vessel would be at the site during the entire drilling operation. It would carry an FRU with 750 feet of 3.6-foot expandi-boom. A small boat would be stored on the response vessel to assist in deploying the boom. The FRU consists of a weir-type skimmer, pumping system, and tanks with a pumping capacity of over 1,000 barrels per 12-hour day. The vessel would also carry a Dracone inflatable barge with a storage capacity of over 1,000 barrels. Total storage capacity of the FRU storage tanks, Dracone, and vessel would be about 2,700 barrels. The vessel would also carry dispersants, storage tanks, and sorbent materials to clean up minor spills.

Additional FRU's and Clean Atlantic Associates (the offshore oil and gas industry oil spill cooperative established for the Atlantic OCS) oil spill response equipment and communications gear would be stored at Morehead City. Helicopter response would operate out of Michael J. Smith Field.

In the event of a very large spill, additional equipment could be acquired from other sources. The OSCP lists locally and regionally available response equipment as well as cooperatives of which Mobil is a partner. These cooperatives include the Clean Gulf Associates, the Clean Caribbean

Cooperative; the Oil Spill Service Center, Southampton, England; and Delaware Bay's River Cooperative.

Renewing currently moribund oil and gas activities on the Atlantic OCS will require a corresponding increase in onshore basing and equipment for OCS oil spill response operations.

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E Assumed Mitigating Measures

E. Assumed Mitigating Measures

The analyses in the EIS assume the implementation of all mitigation measures required by statue or regulation. In addition, the impact analysis assumes that sale-specific stipulations which were commonly adopted in past lease sales are in effect. The following is a brief description of the sale-specific stipulations assumed in the analysis of potential effects of the proposed action.

1. Gulf of Mexico Region

a. Archaeological Resources

This stipulation is designed to protect prehistoric and historic archaeological resources and shipwrecks that are known or that may be discovered in a lease sale area from any petroleum industry activity that might disturb the area.

b. Topographic Features

This stipulation designates a “no activity zone” around several topographic features to protect the biota of these features from adverse effects of routine offshore gas and oil activities (e.g. anchoring, rig emplacement, and drilling discharges.

c. Live Bottom

This stipulation is intended to protect the pinnacle trend area and the associated hard-bottom communities from damage from oil and gas activities. If the required live bottom survey report determines that the live bottom may be adversely impacted by the proposed activity, certain measures, such as relocation or monitoring, may be required.

d. Oil Spill Response (Eastern Gulf of Mexico)

This stipulation is intended to minimize the risk of oil spills reaching Florida State waters by requiring the staging of state-of-the-art mechanical oil spill response equipment within specified time frames and by requiring that oil dispersant chemicals and equipment be maintained in a state of readiness.

e. Military Areas

This stipulation has three sections: hold harmless,electromagnetic emissions, and operational. The hold harmless section serves to protect the U.S. Government from liability in the event of an accident involving a lessee and military activities. The electromagnetic emissions section requires the lessee and its agents to reduce and curtail the use of equipment emitting electromagnetic energy in certain areas. This reduces the impact of offshore gas and oil activities on military communications and missile testing. The operational section requires prior notification of the military when offshore gas and oil activities are scheduled within a military use area, to assist in scheduling activities, to prevent potential conflicts.

A second stipulation, requires the evacuation upon the receipt of a directive from the Regional Director, the evacuation of all personnel from all structures on the lease and the shutting in and securing of all wells and other equipment, including pipelines on the lease.

2. Alaska Region

a. Archaeological Resources

This stipulation is designed to protect prehistoric and historic archaeological resources and shipwrecks that are known or that may be discovered in a lease sale area from any petroleum industry activity that might disturb the area.

b. Orientation Program

This stipulation is designed to provide increased protection of the environment by promoting an understanding of, and appreciation for, local community values, customs, and lifestyles of Alaskans. It also provides information to industry on the biological resources used for commercial and subsistence purposes, archaeological resources of the area and appropriate ways to protect them, and reducing industrial noise and disturbance effects on marine mammals and marine and coastal birds.

3. Pacific Region

a. Archaeological Resources

This stipulation is designed to protect prehistoric and historic archaeological resources and shipwrecks that are known or that may be discovered in a lease sale area from any petroleum industry activity that might disturb the area.

b. Biological Resources

This stipulation in intended to protect all biological resources, particularly habitats associated with hard bottom (rocky) areas. Required site specific surveys would determine the existence of any special biological resources such as unusual, rare or uncommon ecosystems.

c. Oil Spill Response Requirements

This stipulation is intended to protect biological and other resources by requiring an adequate level of oil spill containment and cleanup equipment in a state of readiness. In most cases the response capability would be in the form of an oil industry cooperative.

d. Testing of Oil Spill Containment Equipment

This stipulation is intended to ensure readiness in deploying spill cleanup equipment. The key feature here is the requirement of periodic drills to test equipment in varying conditions and at various locations.

e. Military Areas

This stipulation has three sections: hold harmless,electromagnetic emissions, and operational. The hold harmless section serves to protect the U.S. Government from liability in the event of an accident involving a lessee and military activities. The electromagnetic emissions section requires the lessee and its agents to reduce and curtail the use of equipment emitting electromagnetic energy in certain areas. This reduces the impact of offshore gas and oil activities on military communications and missile testing. The operational section requires prior notification of the military when offshore gas and oil activities are scheduled within a military use area, to assist in scheduling activities, to prevent potential conflicts.

A second stipulation, requires the evacuation upon the receipt of a directive from the Regional Director, the evacuation of all personnel from all structures on the lease and the shutting in and securing of all wells and other equipment, including pipelines on the lease.

4. Atlantic Region

a. Archaeological Resources

This stipulation is designed to protect prehistoric and historic archaeological resources and shipwrecks that are known or that may be discovered in a lease sale area from any petroleum industry activity that might disturb the area.

b. Biological Resources

This stipulation is intended protect valuable biological resources. Required site specific surveys would determine the existence of any special biological resources such as unusual, rare or uncommon ecosystems.

c. Military Areas

This stipulation has three sections: hold harmless,electromagnetic emissions, and operational. The hold harmless section serves to protect the U.S. Government from liability in the event of an accident involving a lessee and military activities. The electromagnetic emissions section requires the lessee and its agents to reduce and curtail the use of equipment emitting electromagnetic energy in certain areas. This reduces the impact of offshore gas and oil activities on military communications and missile testing. The operational section requires prior notification of the military when offshore gas and oil activities are scheduled within a military use area, to assist in scheduling activities, to prevent potential conflicts.

A second stipulation, requires the evacuation upon the receipt of a directive from the Regional Director, the evacuation of all personnel from all structures on the lease and the shutting in and securing of all wells and other equipment, including pipelines on the lease.

F

Analysis of the Chukchi Sea and Bering Sea Sale Options

F. Analysis of the Chukchi Sea and Bering Sea Sale Options

1. Introduction

Two of the options in the draft Proposed Program for the Bering Sea do not identify the specific planning areas where sales would be held. These options aimed at responding to expressed concerns for the limitation of areas proposed for consideration and the provision for a Request for Interest and Comments. These options propose that as a result of responses to a Request for Interest and Comments, one sale would be selected in the St. George Basin or the Hope Basin Planning Areas and one sale would be selected in either the Navarin Basin, Norton Basin or St. Matthew-Hall Planning Areas. There are six possible sale combinations for the Bering Sea. To avoid the redundancy of analyzing all six combinations for every resource, two planning areas (St. George and Navarin Basins) were identified for impacts analysis in Section IV.D. These planning areas have the highest potential for being selected to have a sale at the time of the Request for Interest and Comments.

This Appendix presents an impact analysis of the other five combinations. The resource estimates assumed to be lease, discovered and developed; the hypothetical exploration and development scenarios; and the assumed number of oil spill associated with the production of oil from these planning areas are presented in Section IV.D.1.a. The assumptions used to develop the exploration and development activity and method of transporting the oil to shore are presented in Section IV.D.1.a.

The St. George and St. Matthew-Hall Basin Planning Areas option would involve the construction of one platform in the St. George Basin; no pipelines would be constructed. One tanker oil spill would be assumed to occur in the St. George Basin.

The St. George and Norton Basin Planning Areas option would involve the construction of one platform in each of the planning areas; no pipelines would be constructed. One tanker oil spill would be assumed to occur in each of these planning areas.

The Hope and Navarin Basin Planning Areas for lease sales would involve the construction of one platform in each of the planning areas and 145 km (90 mi) of pipeline, with a single landfall somewhere in the Hope Basin. One tanker oil spill would be assumed to occur in each of these planning areas.

The Hope and St. Matthew-Hall Basin Planning Areas for lease sales would involve the construction of one platform in the Hope Basin and 145 km (90 mi) of pipeline, with a single landfall somewhere in the Hope Basin. One tanker oil spill would be assumed to occur in the Hope Basin.

The Hope and Norton Basin Planning Areas for lease sales would involve the construction of one platform in each of the planning areas and 145 km (90 mi) of pipeline, with a single landfall somewhere in the Hope Basin. One tanker oil spill would be assumed to occur in each of these planning areas.

2. Environmental Consequences

a. Impacts on Water Quality

(1) St. George Basin and St. Matthew-Hall

The St. George Basin and St. Matthew-Hall option would reduce the St. George Basin and Navarin Basin option's effect on water quality in the Bering Sea through the elimination of routine activities (drilling and production discharges [muds and cuttings, formation waters], and construction activities [dredging, siting, and platforms removal]) and accidental oil spills that could affect water quality in the Navarin Basin. Because the assumption for St. Matthew-Hall is exploration only, oil spills or associated activity are assumed to not occur. As a result, water quality in the St. Matthew-Hall area would not be affected. The effects on water quality in the St. George Basin would be the same as indicated for the St. George Basin and Navarin Basin option because the level of industry activity and number of assumed oil spills are equivalent. The overall effect of this option would be the same as indicated for the St. George Basin and Navarin Basin option in the base case analysis.

(2) St. George Basin and Norton Basin

The St. George Basin and Norton Basin option would not reduce the St. George Basin and Navarin Basin option's effect on water quality in the Bering Sea. The effects on water quality in the St. George Basin would be the same as indicated for the St. George Basin and Navarin Basin option because the level of industry activity and number of assumed oil spills are equivalent. In the Norton Basin, the effects on water quality would be similar to those identified for the Navarin Basin, because the level of industry activity and number of assumed oil spills are comparable. However, because the resource estimate and levels of industry activity for the Norton Basin are slightly greater than the Navarin Basin, the effects on water quality from drilling and production discharges (muds and cuttings, formation waters) and construction activities (dredging, siting, and platform removal) would be slightly increased. Also, one oil spill is assumed to occur in the Norton Basin. The overall effect of this option would be the same as indicated for the St. George Basin and Navarin Basin option in the base case analysis.

(3) Hope Basin and Navarin Basin

The Hope Basin and Navarin Basin option would not reduce the St. George Basin and Navarin Basin option's effect on water quality. The effects on water quality in the Navarin Basin would be the same as indicated for the St. George Basin and Navarin Basin option because the level of industry activity and number of assumed oil spills are equivalent. In the Hope Basin, the effects on water quality would be similar to those identified for the St. George Basin because the level of industry activity and number of assumed oil spills are very comparable. However, because the resource estimate for the Norton Basin is slightly greater than the St. George Basin, the effects on water quality from formation-water discharges would be slightly increased. Also, one oil spill is assumed to occur in the Hope Basin. The overall effect of this option would be the same as indicated for the St. George Basin and Navarin Basin option in the base case analysis.

(4) Hope Basin and St. Matthew-Hall

The Hope Basin and St. Matthew-Hall option would reduce the St. George Basin and Navarin Basin option's effect on water quality through the elimination of routine activities (drilling and production discharges [muds and cuttings, formation waters], and construction activities [dredging, siting, and platform removal]) and accidental oil spills that could affect water quality. Because the assumption for the St. Matthew-Hall area is exploration only, oil spills or associated activity are assumed to not occur. As a result, water quality in the St. Matthew-Hall area would not be affected. In the Hope Basin, the effects on water quality would be similar to those identified for the St. George Basin because the level of industry activity and number of assumed oil spills are very comparable. However, because the resource estimate for the Norton Basin is slightly greater than the St. George Basin, the effects on water quality from formation-water discharges would be slightly increased. Also, one oil spill is assumed to occur in the Hope Basin. The overall effect of this option would be the same as indicated for the St. George Basin and Navarin Basin option.

(5) Hope Basin and Norton Basin

The Hope Basin and Norton Basin option would not reduce the St. George Basin and Navarin Basin option's effect on water quality. In the Hope Basin, the effects on water quality would be similar to that identified for the St. George Basin because the level of industry activity and number of assumed oil spills are very comparable. However, because the resource estimate for the Norton Basin is slightly greater than the St. George Basin, the effects on water quality from formation-water discharges would be slightly increased. Also, one oil spill is assumed to occur in the Hope Basin. In the Norton Basin, the effects on water quality would be similar to those identified for the Navarin Basin because the level of industry activity and number of assumed oil spills are comparable. However, because the resource estimate and levels of industry activity for the Norton Basin are slightly greater than the Navarin Basin, the effects on water quality from drilling and production discharges (muds and cuttings, formation waters) and construction activities (dredging, siting, and platform removal) would be slightly increased. Also, one oil spill is assumed to occur in the Norton Basin. The overall effect of this options would be the same as indicated for the St. George Basin and Navarin Basin option in the base case analysis.

b. Impacts on Air Quality

Potential sales that could occur in place of the St. George Basin and Navarin Basin sales are Hope Basin (instead of St. George) and either Norton Basin or St. Matthew-Hall (instead of Navarin). The following analysis considers potential changes in shoreline concentrations of pollutants should Hope Basin, Norton Basin, or St. Matthew-Hall sale occur in place of either a St. George Basin or Navarin Basin sale.

The St. George Basin and Navarin Basin option estimates of shoreline concentrations of NO_x are 0.28 ug/m^3 for exploration and 0.02 ug/m^3 for production (refer to analysis for Alternative I). Shoreline concentrations for other options are presented below.

Accidental emissions result from gas blowouts, evaporation of spilled oil, and burning of spilled oil. The number of spills for the St. George Basin and Navarin Basin option and for alternative sale options is the same except for the two St. Matthew-Hall options. The effects of accidental emissions would be about the same as the St. George Basin and Navarin Basin option but lower for the St. Matthew-Hall options. The same level of effect is assumed because accidents are expected to occur over the lifetime of activities and would not be expected to occur in the same year and location.

(1) St. George Basin and St. Matthew-Hall

The maximum shoreline concentration of pollutants for the St. George Basin and St. Matthew-Hall option would be lower than the St. George Basin and Navarin Basin option presented in Section IV.D.1.a. because the St. Matthew-Hall scenario represents a lower annual level of exploration and no production. The maximum shoreline concentration of NO_x would be 0.18 ug/m^3 for St. Matthew-Hall.

(2) St. George Basin and Norton Basin

The maximum shoreline concentration of pollutants for the St. George and Norton Basin option would be higher than the St. George Basin and Navarin Basin option because the Norton Basin scenario represents a higher annual level of exploration and production. The maximum shoreline concentration of NO_x would be 0.18 ug/m^3 for exploration and 0.03 ug/m^3 for production for Norton Basin.

(3) Hope Basin and Navarin Basin

The maximum shoreline concentration of pollutants for the Hope Basin and Navarin Basin option would be lower than the St. George Basin and Navarin Basin option because the Hope Basin scenario represents a lower annual level of exploration and production. The maximum shoreline concentration of NO_x would be 0.27 ug/m^3 for exploration and 0.02 ug/m^3 for production for Hope Basin.

(4) Hope Basin and St. Matthew-Hall

The maximum shoreline concentration of pollutants for the Hope Basin and St. Matthew-Hall option would be lower than the St. George Basin and Navarin Basin option because the Hope Basin and St. Matthew-Hall scenario represents a lower annual level of exploration and production. The maximum shoreline concentration of NO_x would be 0.27 ug/m^3 for exploration and 0.02 ug/m^3 for production for Hope Basin. The maximum shoreline concentration of NO_x would be 0.18 ug/m^3 for St. Matthew-Hall.

(5) Hope Basin and Norton Basin

The maximum shoreline concentration of pollutants for the Hope Basin and Norton Basin option would be lower than the St. George Basin and Navarin Basin option because the Hope and Norton Basin scenario overall represents a lower annual level of exploration and production. The maximum shoreline concentration of NO_x would be 0.27 ug/m^3 for exploration and 0.02 ug/m^3 for production for Hope Basin. The maximum shoreline concentration of NO_x would be 0.18 ug/m^3 for exploration and 0.03 ug/m^3 for production for Norton Basin.

c. Impacts on Marine Mammals

(1) Bowhead Whale

(a) St. George Basin and St. Matthew-Hall

Bowhead whales occur in the Bering Sea during the winter period (generally November to April). During this time they are widely dispersed in the Bering Sea in U.S. and Russian waters. Bowheads would have about the same likelihood of encountering industrial noise and crude oil in either the St. Matthew-Hall or Navarin Basins area. For this reason this option is expected to have similar overall effects as the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

Bowhead whales occur in the Bering Sea during the winter period (generally November to April). In the winter, bowheads are likely to be dispersed in the Navarin Basin and Russian waters whereas in the early spring, most bowheads are likely to be more concentrated towards the Norton Basin. However, they are widely dispersed in the Bering Sea in general and may be found in either the Navarin or Norton Basins. Hence, bowheads would have about the same likelihood of encountering industrial noise and crude oil in either basin. For this reason this option is expected to have similar overall effects as the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

Bowhead whales occur in the Bering Sea during the winter period (generally November to April). However, most are generally west of the St. George Basin during this time. In early spring, many bowheads migrate north through the Norton Basin. Hence, this option would increase the chances of bowheads encountering industrial noise or crude oil, and result in greater overall effects than the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

Because bowheads seldom use the St. George Basin but do occur in the Hope Basin and St. Matthew-Hall area, this option is likely to result in a greater rate of bowheads encountering industrial noise and crude oil over that of the George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

Because bowheads seldom use the St. George Basin but do occur in the Hope and Norton Basins, this option is likely to result in a greater rate of bowheads encountering industrial noise and crude oil over that of the George Basin and Navarin Basin option.

(2) Fin And Humpback Whales

(a) St. George Basin and St. Matthew-Hall

Because fin and humpback whales appear equally distributed in these areas, there is an equal chance that they would occur in either St. Matthew-Hall or the Navarin Basin. Hence, this option would not alter expected effects discussed in the George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

Fin and humpback whales are more likely to occur in the central Bering Sea than the northern Bering Sea. Hence, northern options (Norton Basin in this case) would reduce the number of whales encountering industrial noise and crude oil by eliminating the Navarin Basin where they are more concentrated.

(c) Hope Basin and Navarin Basin

Fin and humpback whales are more likely to occur in the central Bering Sea than the northern Bering Sea. Hence, northern options (Hope Basin in this case) would reduce the number of whales encountering industrial noise and crude oil by eliminating the St. George Basin where whales are more concentrated.

(d) Hope Basin and St. Matthew-Hall

The substitution of St. Matthew-Hall for St. George Basin of the George Basin and Navarin Basin option would not alter the effects because fin and humpback whales are equally distributed in these areas. Fin and humpback whales tend to occur in the central Bering Sea and Gulf of Alaska. Hence, northern options (Hope Basin in this case) would reduce the number of whales encountering industrial noise and crude oil by eliminating the Navarin Basin where whales are more concentrated.

(e) Hope Basin and Norton Basin

Fin and humpback whales tend to occur in the central Bering Sea and Gulf of Alaska. Hence, northern options (Hope Basin and Norton Basin in this case) would reduce the number of whales encountering industrial noise and crude oil by eliminating the St. George and Navarin Basins where whales are more concentrated. Because of its more northerly location, this option is likely to have the lowest rate of encounter of all options.

(3) Right, Blue, Sei, And Sperm Whales

(a) St. George Basin and St. Matthew-Hall

Because there is an equal chance of right, blue, sei, and sperm whales occurring in these areas, this option would not alter expected effects for the St. George Basin and Navarin Basin option.

(b) George Basin and Norton Basin

Right, blue, sei, and sperm whales tend to occur in more southerly waters rather than those of the northern Bering Sea. Hence, northern options (Norton Basin in this case) would reduce the number of whales encountering industrial noise and crude oil by eliminating the Navarin Basin where whales are more likely to occur.

(c) Hope Basin and Navarin Basin

Right, blue, sei, and sperm whales tend to occur in more southerly waters. Hence, northern options (Hope in this case) would reduce the number of whales encountering industrial noise and crude oil by eliminating the St. George Basin where whales are more likely to occur. Hence, this option is expected to have similar overall effects as the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

The substitution of St. Matthew-Hall for St. George Basin of the St. George Basin and Navarin Basin option would not alter St. George Basin and Navarin Basin option effects, because right, blue, sei, and sperm whales have an equal chance of occurring in both of these areas. Right, blue, sei, and sperm whales are more likely to occur in more southerly waters. Hence, northern options (Hope Basin in this case) would reduce the number of whales encountering industrial noise and crude oil by eliminating the Navarin Basin where whales are more likely to occur. Also, this option is expected to have similar overall effects as the St. George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

Right, blue, sei, and sperm whales tend to occur in more southerly waters. Hence, northern options (Hope Basin and Norton Basin in this case) would reduce the number of whales encountering industrial noise and crude oil by eliminating the St. George and Navarin Basins where whales are more likely to occur. Hence, this option is expected to have similar overall effects as the St. George Basin and Navarin Basin option. Because of its more northerly location, this option is likely to have the lowest rate of encounter of all options.

(4) Minke Whale

(a) St. George Basin and St. Matthew-Hall

As described in Section IV.D.1.a(3), minke whales are probably more abundant in the St. George Basin Planning Area than in the other Bering Sea planning areas under consideration for leasing. Selection of this combination of lease sales would also be expected to result in the temporary, sublethal impacts described for the base case (see Section IV.D.1.a(3)).

(b) St. George Basin and Norton Basin

Concentrations of minke whales are observed in the St. George Basin Planning Area near the Aleutians and Pribilof Islands during the summer months (Braham and Dahlheim, 1981; Leatherwood et al., 1982). Selection of this combination of lease sales would be expected to result in the impacts described for the base case (see Section IV.D.1.a(3)). Routine activities are expected to displace minke whales from a few square kilometers of summer feeding areas; no mortality from accidental oil spills is expected.

(c) Hope Basin and Navarin Basin

Minke whale numbers are considered to be low in the Hope and Navarin Basins (USDOI, MMS, 1985a). Therefore, selection of this combination of lease sales would be expected to result in less severe impacts to the minke whale population than those described for the base case (see Section IV.D.1.a(3)). Impacts to minke whales within the Hope and Navarin Basin Planning Areas would be negligible.

(d) Hope Basin and St. Matthew-Hall

Minke whales are probably more abundant in the St. Matthew-Hall Basin area than farther north (USDOI, MMS, 1985a). However, only exploratory activities are expected to occur in this planning area, and no accidental oil spills are assumed. Therefore, impacts to minke whales in the Hope and St. Matthew-Hall Planning Areas are expected to be negligible if this combination of lease sales is selected. Impacts to the minke whale population as a whole would be less severe than those described for the base case (see Section IV.D.1.a(3)).

(e) Hope Basin and Norton Basin

Although minke whales range northward into the Chukchi Sea during the summer months, their numbers are considered low north of St. Lawrence Island in the Norton and Hope Basins (USDOI, MMS, 1985a). Therefore, selection of this combination of lease sales would be expected to result in less severe impacts to the minke whale population than those described for the base case (see Section IV.D.1.a(3)). Impacts to minke whales within the Hope and Norton Basin Planning Areas would be negligible.

(5) Gray Whale

(a) St. George Basin and St. Matthew-Hall

Summer gray whale densities in these areas are much lower than in the prime feeding grounds to the north. Since only exploratory activities are expected to occur in the St. Matthew-Hall Planning Area, construction activities would be substantially reduced, and one less oil spill would be assumed if this combination of lease sales were selected. Impacts to the gray whale population from selection of this combination of lease sales are expected to be less severe than that described for the base case, and to be temporary and sublethal (see Section IV.D.1.a(3)).

(b) St. George Basin and Norton Basin

Although gray whales do summer in the St. George Basin area, particularly around the Pribilof Islands (USDOI, MMS, 1985c), numbers are much lower than in the Norton Basin. Impacts to the gray whale population from selection of this combination of lease sales are expected to be similar to and somewhat less severe than those described for the base case, and to include mainly temporary and sublethal effects (see Section IV.D.1.a(3)).

(c) Hope Basin and Navarin Basin

Summer gray whale densities in the Navarin Basin are perhaps the lowest in the Bering Sea areas under consideration for leasing. Therefore, impacts to the gray whale population from selection of this combination of lease sales are expected to be similar to and somewhat less severe than those described for the base case, and to include mainly temporary and sublethal effects (see Section IV.D.1.a(3)).

(d) Hope Basin and St. Matthew-Hall

Although the Hope Basin is a major gray whale feeding area, gray whale densities are lower south of St. Lawrence Island in the St. Matthew-Hall Basin. In addition, only exploratory activities are expected to occur in the St. Matthew-Hall Planning Area, and no accidental oil spills are assumed. Due to these lower densities and to the lower levels of construction and associated activities and the assumption of one less oil spill, relative impacts on the gray whale population from selection of this combination of sales are expected to be less severe than those described for the base case, and to be mainly temporary and sublethal (see Section IV.D.1.a(3)).

(e) Hope Basin and Norton Basin

The Hope and Norton Basins contain a large portion of the summer feeding grounds of the gray whale (Braham, 1984a; Moore and Ljungblad, 1984). If this combination of sales is selected, impacts to the gray whale population are expected to be the most severe in comparison with other sale combinations in the Alaska Region. The expected impacts are the same as those described for the base case (see Section IV.D.1.a(3)). Although most effects would be temporary and sublethal, accidental oil spills are expected to result in the death of a few individuals on the summer feeding grounds. This level of mortality would be indistinguishable from natural variability in the gray whale population.

(6) Beluga Whale

Potential sales that could occur in place of the St. George Basin and Navarin Basin sales are Hope Basin (instead of St. George) and either Norton Basin or St. Matthew-Hall (instead of Navarin). The effects of oil and gas activities on beluga whales from leasing in St. George and Navarin Basins are presented in the St. George Basin and Navarin Basin option (see Section IV.D.1.a(8)). Important coastal habitats of belugas in the Bering Sea are far removed from the offshore St. George and Navarin Basin areas. The assumed one tanker spill in each of these planning areas are expected to occur near or within Unimak Pass or offshore of the mainland and not contact important feeding and calving habitats along the Bering Sea coast. Oil that might reach and contact beluga whales in offshore areas would disperse quickly and few whales (perhaps less than 100) are likely to be seriously affected (see Section IV.D.1.a(3)). The effects on beluga whales are expected to be the same as described under the base case for other planning areas in which the whale populations occur. The potential impacts of 5 options are presented below.

(a) St. George Basin and St. Matthew-Hall

The effects of oil and gas activities on beluga whales from leasing in St. George Basin and St. Matthew-Hall are expected to be the same as the St. George Basin and Navarin Basin option presented in Section IV.D.1.a. Leasing in the St. Matthew-Hall area is assumed to result in no oil spills occurring or contacting belugas in the planning area. Noise and disturbance from oil exploration only in St. Matthew-Hall might have short-term, one-season displacement effects on beluga whales along vessel-traffic routes to and from the drill platform. This effect would be the same as noise and disturbance effects expected to occur in other planning areas in the Alaska Region where belugas occur.

(b) St. George Basin and Norton Basin

The effects of oil and gas activities on beluga whales from leasing in St. George Basin and Norton Basin are expected to be the same as the St. George Basin and Navarin Basin option presented in Section IV.D.1.a. The assumed tanker spill that would occur along the tanker route has a low chance (estimated less than 5%) of contacting important coastal habitats of belugas in Norton Sound and in the Yukon-Kuskokwim Delta. Oil that might contact the whales offshore is expected to have no effect on most individual whales with only highly stressed animals being seriously affected (perhaps less than 100) and would have no long-term effects on the whale populations. This effect is expected to be the same as the oil-spill effects experienced by the whales in the Beaufort and Chukchi Sea Planning Areas under the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

The effects of oil and gas activities on beluga whales from leasing in Hope Basin and Navarin Basin are expected to be about the same as under the St. George Basin and Navarin Basin option presented in Section IV.D.1.a. Leasing in Hope Basin is assumed to result one tanker spill. This spill is assumed to occur in the Bering Strait area and contaminate the lead system used by the whales during the spring, but only a small number of whales (perhaps 100) are expected to be seriously affected, representing less than losses due to natural mortality. This effect would be the same as the effects the whales are expected to experience in the Beaufort and Chukchi Sea Planning Areas under the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

The effects of oil and gas activities on beluga whales from leasing in Hope Basin and St. Matthew-Hall are expected to be the same as under the St. George Basin and Navarin Basin option presented in Section IV.D.1.a.

(e) Hope Basin and Norton Basin

The effects of oil and gas activities on beluga whales from leasing in Hope Basin and Norton Basin are expected to be the same as described under the St. George Basin and Navarin Basin option presented in Section IV.D.1.a.

(7) Killer Whale

(a) St. George and St. Matthew-Hall

A few killer whales may die as the result of an accidental oil spill in the St. George Basin Planning Area if this combination of lease sales is selected, but impacts to the killer whale population as a whole are expected to remain as described for the base case (see Section IV.D.1.a(3)).

(b) St. George and Norton Basin

In the spring and fall, killer whales are common near the Pribilof Islands and north of Unimak Pass in the St. George Basin Planning Area (Braham and Dahlheim, 1982; Leatherwood et al., 1982). Although a few killer whales might die as a result of the oil spill assumed to occur in this planning area if this combination of lease sales is selected, any changes in killer whale numbers are expected to be indistinguishable from natural variability in the species' population. Impacts to the killer whale population as a whole are expected to remain as described for the base case (see Section IV.D.1.a(3)).

(c) Hope Basin and Navarin Basin

Killer whale numbers appear to be relatively low in the Hope and Navarin Basin Planning Areas (Braham and Dahlheim, 1982; USDOI, MMS, 1985a). No killer whale mortality due to accidental oil spills is expected in the open waters of the Hope or Navarin Basin Planning Areas if this combination of lease sales is selected, but impacts to the killer whale population as a whole are expected to remain as described for the base case (see Section IV.D.1.a(3)).

(d) Hope Basin and St. Matthew-Hall

Selection of the Hope and St. Matthew-Hall Basin Planning Areas for lease sales would involve the construction of one platform in the Hope Basin and 145 km (90 mi) of pipeline, with a single landfall. One tanker oil spill would be assumed to occur in the Hope Basin.

Killer whale numbers are apparently greater in the St. Matthew-Hall Basin Planning Area than in planning areas to the north (Braham and Dahlheim, 1982). However, only exploratory activities are expected to occur in this planning area, and no accidental oil spills are assumed. Thus, no killer whale mortality due to accidental oil spills is expected in either the Hope or St. Matthew-Hall Basin Planning Areas if this combination of lease sales is selected. Impacts to the killer whale population as a whole are expected to remain as described for the base case (see Section IV.D.1.a(3)).

(e) Hope Basin and Norton Basin

Although killer whales range throughout the Bering Sea, they are uncommon north of Bering Strait, in the Hope Basin Planning Area and farther north (Leatherwood et al., 1982). Killer whales are frequently observed near St. Lawrence Island in the southern Norton Basin Planning Area from spring through fall (USDOI, MMS, 1985a). No killer whale mortality due to accidental oil spills is expected in the open waters of the Hope or Norton Basin Planning Areas if this combination of lease sales is selected, but impacts to the killer whale population as a whole are expected to remain as described for the base case (see Section IV.D.1.a(3)).

(8) Harbor Porpoise

(a) St. George and St. Matthew-Hall

For reasons discussed for the previous sale combination, selection of this combination of lease sales is expected to result in the death of a few harbor porpoises in the St. George Planning Area due to spilled oil. Impacts on the harbor porpoise population as a whole are expected to remain as described for the base case (see Section IV.D.1.a(3)).

(b) St. George Basin and Norton Basin

Harbor porpoises are fairly common along the eastern Aleutian Chain (Leatherwood et al., 1982), and are probably more abundant in the St. George Basin Planning Area than in the other Bering Sea planning areas under consideration for leasing. Therefore, if this combination of leasing sales is selected, it is possible that a few harbor porpoises might die as a result of the accidental oil spill assumed to occur in the St. George Basin Planning Area. This level of mortality would be indistinguishable from natural variability in the harbor porpoise population. Impacts on the harbor porpoise population as a whole are expected to remain as described for the base case (see Section IV.D.1.a(3)).

(c) Hope Basin and Navarin Basin

The Hope and Navarin Basin Planning Areas probably contain the fewest harbor porpoises of any of the planning areas under consideration for leasing in the Bering Sea. Therefore, if this combination of lease sales is selected, harbor porpoises in these areas are not expected to be measurably affected by either routine activities or accidental oil spills. The impacts on the harbor porpoise population as a whole are expected to be somewhat less severe than those described for the base case (see Section IV.D.1.a(3)).

(d) Hope Basin and St. Matthew-Hall

Harbor porpoises are apparently uncommon in both the Hope and St. Matthew-Hall Basin Planning Areas (Leatherwood et al., 1982). Further, only exploratory activities are expected to occur in the latter planning area, and no accidental oil spills are assumed. Therefore, if this combination of lease sales is selected, harbor porpoises are not expected to be measurably affected by either routine activities or accidental oil spills in the Hope and St. Matthew-Hall Basin Planning Areas. The impacts on the harbor porpoise population as a whole are expected to be somewhat less severe than those described for the base case (see Section IV.D.1.a(3)).

(e) Hope Basin and Norton Basin

Harbor porpoises occur along the entire nearshore marine habitat of western Alaska (USDOI, MMS, 1985a), but are apparently uncommon north of Bristol Bay (Frost et al., 1982; Leatherwood et al., 1982). Thus, if this combination of lease sales is selected, harbor porpoises are not expected to be measurably affected by either routine activities or accidental oil spills in the Hope and Norton Basin Planning Areas. The impacts on the harbor porpoise population as a whole are expected to be somewhat less severe than those described for the base case (see Section IV.D.1.a(3)).

(9) Steller Sea Lion

(a) St. George and St. Matthew-Hall

The principal changes resulting from a substitution of OCS activity in the St. Matthew-Hall area for development in Navarin Basin are the elimination of a tanker spill from the Navarin area and a shift of potentially disturbing activities northeast toward St. Lawrence Island. Activity in the St. Matthew-Hall area is assumed to occur only during the open-water period. Elimination of the Navarin Basin oil spill would preclude the most potentially severe impacts in this area discussed under the St. George Basin and Navarin Basin option involving mortality of sea lions. Potential oil spill impacts eliminated by deletion of the Navarin Basin would require one generation or less for recovery of the population. Shifting exploration activities northeastward during the open-water season is not expected to substantially alter disturbance of the sea lion population from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced slightly from those estimated for the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

The principal changes resulting from a substitution of development in the Norton Basin area for that in the Navarin Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Norton area. Substituting the Norton Basin area would eliminate impacts from the Navarin Basin discussed under the St. George Basin and Navarin Basin option involving mortality of sea lions during the open-water season. Potential oil spill impacts eliminated by deletion of the Navarin Basin would require one generation or less for recovery. However, similar impacts would be expected to occur in the Norton Basin area, because sea lions are similarly vulnerable. This option is not expected to substantially alter disturbance of the sea lion population from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be approximately the same as those estimated for the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

The principal changes resulting from a substitution of development in the Hope Basin area for that in the St. George Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Hope area. Substituting the Hope Basin area would eliminate impacts from the St. George Basin discussed under the St. George Basin and Navarin Basin option involving mortality of migrating and foraging sea lions. Sea lions typically do not occur in numbers in the Hope Basin. Potential oil spill impacts eliminated by deletion of the St. George Basin would be expected to require three or more generations for recovery of this population to its former status. This option is not expected to substantially alter disturbance of the sea lion population from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced from those estimated under the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

The principal changes resulting from a substitution of development in the Hope Basin and exploration in the St. Matthew-Hall area for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill in the Hope area. Substituting the Hope Basin and St. Matthew-Hall area would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of migrating and foraging sea lions. Sea lions typically do not occur in numbers in the Hope Basin. Potential oil spill impacts eliminated by deletion of the St. George and Navarin Basins would be expected to require three or more generations for recovery of this population to its former status. This option is not expected to substantially alter disturbance of the sea lion population from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced from those estimated under the St. George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

The principal changes resulting from a substitution of development in the Hope and Norton Basins for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill and disturbance in both Hope and Norton areas. Substituting the Hope and Norton Basins would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of migrating and foraging sea lions. Sea lions typically do not occur in large numbers in the Hope or Norton Basins. Potential oil spill impacts eliminated by deletion of the St. George and Navarin Basins would be expected to require three or more generations for recovery of this population to its former status. This option is not expected to substantially alter disturbance of the sea lion population from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced from those estimated under the St. George Basin and Navarin Basin option.

(10) Other Pinnipeds

(a) St. George and St. Matthew-Hall

The principal changes resulting from a substitution of OCS activity in the St. Matthew-Hall area for development in Navarin Basin are the elimination of a tanker spill from the Navarin area and a shift of potentially disturbing activities northeast toward St. Lawrence Island. Activity in the St. Matthew-Hall area is assumed to occur only during the open-water period. Elimination of the Navarin Basin oil spill would preclude the most potentially severe impacts in this area discussed under the St. George Basin and Navarin Basin option involving ice seal pups and walrus calves. Potential oil spill impacts eliminated by deletion of the Navarin Basin would require one generation or less for recovery of these populations. Shifting exploration activities northeastward during the open-water season is not expected to substantially alter disturbance of pinniped populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced somewhat from those estimated for the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

The principal changes resulting from a substitution of development in the Norton Basin area for that in the Navarin Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Norton area. Substituting the Norton Basin area would eliminate impacts from the Navarin Basin discussed under the St. George Basin and Navarin Basin option involving mortality of ice seal pups and walrus calves. Potential oil spill impacts eliminated by deletion of the Navarin Basin would require one generation or less for recovery. However, similar impacts would be expected to occur in the Norton Basin area because the species are similar and vulnerability of ice seal pups, as well as walrus calves migrating through the area, would be similar to that in the Navarin Basin. This substitution is not expected to substantially alter disturbance of either ice seal or walrus populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be approximately the same as those estimated for the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

The principal changes resulting from a substitution of development in the Hope Basin area for that in the St. George Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Hope area. Substituting the Hope Basin area would eliminate impacts from the St. George Basin area discussed under the St. George Basin and Navarin Basin option involving mortality of migrating and foraging fur seals, small numbers of seasonally occurring ice seals and walruses, and resident harbor seals. Potential oil spill impacts eliminated by deletion of the St. George Basin would range up to three generations in the case of the fur seal for recovery of the population to its original status and one or more generation for recovery of the harbor seal population. Although somewhat elevated, impacts on ice seal and walrus populations would be expected to occur with the substitution of Hope Basin for St. George; impact on the fur seal and harbor seal is expected to be reduced from the St. George Basin and Navarin Basin option. This option is not expected to substantially alter disturbance of pinniped populations from that estimated for the St. George Basin and Navarin Basin option, all of which require less than one generation for recovery. Overall impacts resulting from this option are expected to be somewhat elevated for ice seals and walruses from those estimated for the St. George Basin and Navarin Basin option and reduced for the fur seal and harbor seal.

(d) Hope Basin and St. Matthew-Hall

The principal changes resulting from a substitution of development in the Hope Basin and exploration in the St. Matthew-Hall area for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill in the Hope area. Substituting the Hope Basin and St. Matthew-Hall area would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of migrating and foraging fur seals, seasonally occurring ice seal and walruses, and resident harbor seals. Potential oil spill impacts eliminated by deletion of the St. George and Navarin Basins would include those ranging up to three generations for recovery to its former status in the case of the fur seal population and one or more generation for recovery of the harbor seal population. Although similar overall impacts on ice seal and walrus populations would be expected to occur with the substitution of Hope Basin and St. Matthew-Hall for St. George and Navarin Basins (i.e., most populations are vulnerable to spills elsewhere in the region), impacts on fur seals and harbor seals are expected to be reduced from the St. George Basin and Navarin Basin option. This option is expected to decrease disturbance of pinniped populations from that estimated for the St. George Basin and Navarin Basin option, but still require less than one generation for recovery. Overall impacts resulting from this option are expected to be somewhat reduced from those estimated under the St. George Basin and Navarin Basin option for ice seals and walruses and reduced for the fur seal and harbor seal populations.

(e) Hope Basin and Norton Basin

The principal changes resulting from a substitution of development in the Hope and Norton Basins for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill and disturbance in both Hope and Norton areas. Substituting the Hope and Norton Basins would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of migrating and foraging fur seals, ice seal pups, walrus calves, and resident harbor seals. Potential oil spill impacts eliminated by deletion of St. George and Navarin Basins would include those ranging up to three generations for recovery to its former status in the case of the fur seal population and one or more generation for recovery for the harbor seal population. Although somewhat higher overall impacts on ice seal and walrus populations would be expected to occur with the substitution of Hope and Norton Basins for St. George and Navarin Basins (i.e., more of the populations are vulnerable to both spills in the former areas), impacts on fur seals and harbor seals are expected to be reduced from the base case. This option is expected to decrease disturbance of pinniped populations from that estimated for the St. George Basin and Navarin Basin option but still require less than one generation for recovery. Overall impacts resulting from this option are expected to be somewhat higher than those estimated under the St. George Basin and Navarin Basin option for ice seals and walruses and reduced for the fur seal and harbor seal populations.

(11) Polar Bear

(a) St. George Basin and St. Matthew-Hall

The principal changes resulting from a substitution of OCS activity in the St. Matthew-Hall area for development in Navarin Basin are the elimination of a tanker spill from the Navarin area and a shift of potentially disturbing activities northeast toward St. Lawrence Island. Activity in the St. Matthew-Hall area is assumed to occur only during the open-water period. Elimination of the Navarin Basin oil spill would preclude the most potentially severe impacts in this area discussed under the St. George Basin and Navarin Basin option involving mortality of wintering polar bears. Potential oil spill impacts eliminated by deletion of the Navarin Basin would require one generation or less for recovery of the population. Shifting exploration activities northeastward during the open-water season is not expected to substantially alter disturbance of the polar bear population from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced slightly from those estimated for the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

The principal changes resulting from a substitution of development in the Norton Basin area for that in the Navarin Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Norton area. Substituting the Norton Basin area would eliminate impacts from the Navarin Basin discussed under the St. George Basin and Navarin Basin option involving mortality of wintering polar bears. Potential oil-spill impacts eliminated by deletion of the Navarin Basin would require one generation or less for recovery. However, similar impacts would be expected to occur in the Norton Basin area, because polar bears are similarly vulnerable. This option is not expected to substantially alter disturbance of the polar bear population from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be approximately the same as those estimated for the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

The principal changes resulting from a substitution of development in the Hope Basin area for that in the St. George Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Hope area. Substituting the Hope Basin area where polar bears occur for the St. George Basin where they do not is expected to increase potential mortality as discussed under the St. George Basin and Navarin Basin option. Potential oil spill impacts added by substitution of the Hope Basin would require a generation or more for recovery of the population to its former status. This option is expected to increase disturbance of the polar bear population somewhat from that estimated for the St. George Basin and Navarin Basin option, but still require less than one generation for recovery. Overall impacts resulting from this option are expected to be somewhat elevated from those estimated under the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

The principal changes resulting from a substitution of development in the Hope Basin and exploration in the St. Matthew-Hall area for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill in the Hope area. Substituting the Hope Basin and St. Matthew-Hall area would eliminate impacts discussed under the St. George Basin and Navarin Basin option involving mortality of polar bears during the ice season primarily from the Navarin Basin while increasing impacts in the Hope Basin. Potential oil spill impacts added by substitution of development in the Hope Basin would require a generation or more for recovery of the population to its former status. This option is expected to increase disturbance of polar bears somewhat from that estimated for the St. George Basin and Navarin Basin option, but still require less than one generation for recovery. Overall impacts resulting from this option are expected to be somewhat elevated from those estimated under the St. George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

The principal changes resulting from a substitution of development in the Hope and Norton Basins for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill and disturbance in both Hope and Norton areas. Substituting the Hope and Norton Basins would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of polar bears during the ice season primarily from the Navarin Basin while increasing impacts in the Hope and Norton Basins. Potential oil spill impacts added by substitution of development in the Hope and Norton Basins would require a generation or more for recovery of the population to its former status because more of the population would be vulnerable to both spills in these areas than in Navarin and St. George Basins. This option is expected to increase disturbance of polar bears somewhat from that estimated for the St. George Basin and Navarin Basin option but still require less than one generation for recovery. Overall impacts resulting from this option are expected to be higher than those estimated under the St. George Basin and Navarin Basin option.

(12) Sea Otters (Alaska Population)

(a) St. George Basin and St. Matthew-Hall

Because sea otters typically do not occur in the Navarin basin or the St. Matthew-Hall area, overall impacts resulting from this option are expected to remain unchanged from those estimated for the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

Because sea otters typically do not occur in the Navarin or Norton areas, overall impacts resulting from this option are expected to remain unchanged from those estimated for the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

The principal changes resulting from a substitution of development in the Hope Basin area for that in the St. George Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Hope area. Substituting the Hope Basin area would eliminate impacts from the St. George Basin discussed under the St. George Basin and Navarin Basin option involving mortality of sea otters resident in adjacent areas. Sea otters do not occur in the Hope Basin. Potential oil spill impacts eliminated by deletion of the St. George Basin would be expected to require two or more generations for recovery of this population to its former status. This option is not expected to substantially alter disturbance of the sea otter population from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced from those estimated under the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

The principal changes resulting from a substitution of development in the Hope Basin and exploration in the St. Matthew-Hall area for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill in the Hope area. Substituting the Hope Basin and St. Matthew-Hall area would eliminate impacts involving mortality of sea otters resident in areas adjacent to the St. George Basin discussed under the St. George Basin and Navarin Basin option. Sea otters do not occur in the Hope Basin or the St. Matthew-Hall area. Potential oil spill impacts eliminated by deletion of the St. George and Navarin Basins would be expected to require two or more generations for recovery of this population to its former status. This option is not expected to substantially alter disturbance of the sea otter population from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced from those estimated under the St. George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

The principal changes resulting from a substitution of development in the Hope and Norton Basins for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill and disturbance in both Hope and Norton areas. Substituting the Hope and Norton Basins would eliminate impacts involving mortality of sea otters resident in areas adjacent to the St. George Basin discussed under the St. George Basin and Navarin Basin option. Sea otters do not occur in the Hope or Norton Basins. Potential oil spill impacts eliminated by deletion of the St. George and Navarin Basins would be expected to require two or more generations for recovery of this population to its former status. This option is not expected to substantially alter disturbance of the sea otter population from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced from those estimated under the St. George Basin and Navarin Basin option.

d. Impacts on Terrestrial Mammals (Caribou)

(1) St. George and St. Matthew-Hall

Because caribou do not occur in the Navarin or St. Matthew-Hall areas, overall impacts resulting from this option are expected to remain unchanged from those estimated for the St. George Basin and Navarin Basin option.

(2) St. George Basin and Norton Basin

Because caribou typically do not occur in substantial numbers adjacent to Norton Basin, overall impacts resulting from deletion of the Navarin Basin are expected to remain unchanged from those estimated for the St. George Basin and Navarin Basin option.

(3) Hope Basin and Navarin Basin

Because caribou typically do not occur in substantial numbers adjacent to either St. George or Hope Basins, overall impacts resulting from deletion of the St. George Basin are expected to remain unchanged from those estimated for the St. George Basin and Navarin Basin option.

(4) Hope Basin and St. Matthew-Hall

Because caribou typically occur in greater numbers adjacent to the Hope Basin than the St. George Basin, overall impact resulting from deletion of the St. George and Navarin Basins is expected to increase somewhat from those estimated for the St. George Basin and Navarin Basin option.

(5) Hope Basin and Norton Basin

Because caribou typically occur in greater numbers adjacent to the Norton/Hope Basins than the St. George Basin, overall impacts resulting from deletion of the St. George and Navarin Basins are expected to increase somewhat from those estimated for the St. George Basin and Navarin Basin option.

e. Impacts on Marine and Coastal Birds

(1) Arctic And American PeregrIne Falcon

(a) St. George Basin and St. Matthew-Hall

Because peregrine falcons do not use offshore areas to any extent, oil and gas activities in the Navarin Basin are not likely to affect peregrine falcons. However, peregrine falcons are likely to use the coastal areas of the St. Matthew-Hall area. Hence, this option is likely to have greater effects on peregrine falcons than the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

Because the coastal areas of Norton Basin are likely to used by peregrine falcons, and the Navarin Basin is not, this option would also have greater affects than the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

The coastal areas of either basin are likely to be used by peregrine falcons, however, the Hope Basin has more area of coastal habitat that can be used by peregrine falcons. Hence, this option is likely to have greater effects than the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

The coastal areas of Hope Basin and St. Matthew-Hall are likely to be used by peregrine falcons. However, the St. George Basin contains little potential peregrine falcon habitat and the Navarin Basin contains none. Hence, this option is likely to result in greater effects on peregrine falcons than the St. George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

The coastal areas of Hope Basin and Norton Basin are likely to used by peregrine falcons. However, the St. George Basin contains little potential peregrine falcon habitat and the Navarin Basins contains none. Hence, this option is likely to result in greater effects on peregrine falcons than the St. George Basin and Navarin Basin option.

(2) Short-Tailed Albatross

Potential sales that could occur in place of the St. George Basin and Navarin Basin sales are Hope Basin (instead of St. George) and either Norton Basin or St. Matthew-Hall (instead of Navarin). The potential impacts of 5 options are presented below.

(a) St. George Basin and St. Matthew-Hall

This option would substitute St. George Basin and St. Matthew-Hall in place of St. George Basin and Navarin Basin in the St. George Basin and Navarin Basin option. However, because there are no known areas where short-tailed albatrosses concentrate, there is an equal probability that they would occur in either St. Matthew-Hall or the Navarin Basin. Hence, this option would not alter expected effects discussed in the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

This option would substitute St. George Basin and Norton Basin in place of St. George Basin and Navarin Basin in the St. George Basin and Navarin Basin option. While there are no known areas where short-tailed albatrosses concentrate, most sightings have been in the Aleutian and Gulf of Alaska areas. Hence, northern options (Norton Basin in this case) may afford a small advantage for the short-tailed albatross over that of the St. George Basin and Navarin Basin option. However, due to the low number of sightings expected, the St. George Basin and Norton Basin option is generally expected to have similar effects as the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

This option would substitute Hope Basin in place of St. George Basin in the St. George Basin and Navarin Basin option. As indicated for the St. George Basin and Norton Basin option, northern options (Hope Basin in this case) may afford a small advantage for the short-tailed albatross over that of the St. George Basin and Navarin Basin option. However, due to the low number of sightings expected, the Hope Basin and Navarin Basin option is generally expected to have similar effects as the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

This option would substitute Hope Basin and St. Matthew-Hall in place of St. George Basin and Navarin Basin in the St. George Basin and Navarin Basin option. As indicated for the St. George Basin and Navarin Basin option, northern options (Hope Basin in this case) may afford a small advantage for the short-tailed albatross over that of the St. George Basin and Navarin Basin option. However, due to the low number of sightings expected, the Hope Basin and St. Matthew-Hall option is generally expected to have similar effects as the St. George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

This option would substitute Hope Basin and Norton Basin in place of St. George Basin and Navarin Basin in the St. George Basin and Navarin Basin option. As indicated for the St. George Basin and Norton Basin option, northern options (Hope Basin and Norton Basin in this case) may afford a small advantage for the short-tailed albatross over that of the St. George Basin and Navarin Basin option. However, due to the low number of sightings expected, the Hope Basin and Norton Basin option is generally expected to have similar effects as the St. George Basin and Navarin Basin option.

(3) Seabirds

(a) St. George and St. Matthew-Hall

The principal changes resulting from a substitution of OCS activity in the St. Matthew-Hall area for development in Navarin Basin are the elimination of a tanker spill from the Navarin area and a shift of potentially disturbing activities northeast toward St. Lawrence Island. Activity in the St. Matthew-Hall area is assumed to occur only during the open-water period. Elimination of the Navarin Basin oil spill would preclude the most potentially severe impacts in this area discussed under the St. George Basin and Navarin Basin option involving mortality of overwintering and migrating seabirds as well as seabirds breeding at St. Matthew Island. Potential oil spill impacts eliminated by deletion of the Navarin Basin would range up to three generations for recovery of these populations to their original status. Shifting exploration activities northeastward during the open-water season is not expected to substantially alter disturbance of seabird populations from that estimated for the St. George Basin and Navarin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced somewhat from those estimated for the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

The principal changes resulting from a substitution of development in the Norton Basin area for that in the Navarin Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Norton area. Substituting the Norton Basin area would eliminate impacts from the Navarin Basin discussed under the St. George Basin and Navarin Basin option involving mortality of overwintering and migrating seabirds as well as those breeding on St. Matthew Island. Potential oil spill impacts eliminated by deletion of the Navarin Basin would range up to three generations for recovery of these populations to their original status. However, similar impacts would be expected to occur in the Norton Basin area because most of the species are similar and vulnerability of seabirds breeding on St. Matthew Island would be replaced by that of those breeding on Little Diomede and King Islands. This option is not expected to substantially alter disturbance of seabird populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be approximately the same as those estimated for the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

The principal changes resulting from a substitution of development in the Hope Basin area for that in the St. George Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Hope area. Substituting the Hope Basin area would eliminate impacts from the St. George Basin discussed under the St. George Basin and Navarin Basin option involving mortality of overwintering and migrating seabirds as well as seabirds breeding on the Pribilof and eastern Aleutian Islands. Potential oil-spill impacts eliminated by deletion of the St. George Basin would range up to several generations for recovery of these populations to their original status. However, similar impacts would be expected to occur in the Hope Basin area, because most of the species are similar and vulnerability of seabirds breeding in the Pribilofs would be replaced to some extent by that of those breeding on Little Diomede Island. This option is not expected to substantially alter disturbance of seabird populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery of these populations. Overall impacts resulting from this sale combination are expected to be slightly reduced from those estimated under the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

The principal changes resulting from a substitution of development in the Hope Basin and exploration in the St. Matthew-Hall area for that in St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill in the Hope area. Substituting the Hope Basin and St. Matthew-Hall area would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of overwintering and migrating seabirds as well as seabirds breeding on the Pribilof, St. Matthew, and eastern Aleutian Islands. Potential oil spill impacts eliminated by deletion of the St. George and Navarin Basins would include those on approximately one-half of the bird populations seasonally occupying the Bering and southern Chukchi Seas (because Little Diomede and King Island colonies are at risk from a Hope Basin spill), requiring up to several generation for recovery of these populations to their former status. Overall impacts on bird populations would be expected to decline from the St. George Basin and Navarin Basin option with the substitution of Hope Basin and St. Matthew-Hall for St. George and Navarin Basins as a result of substituting risk to seabird colonies on Little Diomede Island for that in the Pribilofs and the St. Matthew Island area. This option is expected to decrease the disturbance of seabird populations somewhat from that estimated for the base case but still require less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced from those estimated under the St. George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

The principal changes resulting from a substitution of development in the Hope and Norton Basins for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill and disturbance in both Hope and Norton areas. Substituting the Hope and Norton Basins would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin option involving mortality of overwintering and migrating seabirds as well as seabirds breeding on the Pribilof, St. Matthew, and eastern Aleutian Islands. Potential oil spill impacts eliminated by deletion of St. George and Navarin Basins would include those on more than one-half of the bird populations seasonally occupying the Bering and southern Chukchi Seas (because Little Diomede, King Island, Bluff and other smaller colonies are at risk from Hope or Norton Basin spills) ranging up to several generations for recovery of these populations to their former status. Overall impacts on seabird populations would be expected to decline somewhat from the St. George Basin and Navarin option with the substitution of Hope and Norton Basins for St. George and Navarin Basins as a result of substituting risk to populations seasonally occupying central and southern Bering Sea colony areas for risk to colonies in the northern Bering and southern Chukchi Seas. This option is expected to decrease the disturbance of seabird populations somewhat from that estimated for the St. George Basin and Navarin option but still require less than one generation for recovery. Overall impacts resulting from this option are expected to be somewhat reduced from those estimated under the St. George Basin and Navarin option.

(4) Shorebirds

(a) St. George and St. Matthew-Hall

The effects of routine OCS activities, including air traffic and construction of onshore support facilities, on shorebirds in these planning areas are expected to be the same as described for the base case. The impact of an oil spill in the St. George Basin is expected to include the loss of a few hundred shorebirds with recovery within 1 year. No oil spills are assumed for the St. Matthew-Hall Planning Area.

(b) St. George Basin and Norton Basin

The effects of routine OCS activities, including air traffic and construction of onshore support facilities, on shorebirds in these planning areas are expected to be the same as described for the base case.

The Yukon-Kuskokwim River Delta region, which is one of the most important shorebird breeding and migratory staging areas in Alaska, is located mostly within the St. Matthew-Hall Planning Area. Although no oil spills are assumed for the St. Matthew-Hall Planning Area, a tanker oil spill of 30,000 bbl is assumed to occur from proposed development in the adjacent Norton Basin Planning Area, and this spill could contact the northern portion of the Delta. If a tanker spill were to contact the northern Delta, the impact on shorebirds could be higher than for other lease sale combinations because of the high concentration of shorebirds in the Delta region. Impacts of spill contact with the Delta could include the deaths of a few thousand shorebirds, with recovery occurring in 1-3 years. The impact of an oil spill in the St. George Basin is expected to include the loss of a few hundred shorebirds with recovery within 1 year.

(c) Hope Basin and Navarin Basin

The effects of routine OCS activities, including air traffic, pipeline landfalls, and construction of onshore support facilities, on shorebirds in the Hope and Navarin Basin Planning Areas are expected to be the same as described for the base case. The impact of an oil spill in the Hope Basin is expected to include the loss of a few hundred shorebirds with recovery within 1 year. The oil spill assumed for the Navarin Basin is not expected to contact the shoreline.

(d) Hope Basin and St. Matthew-Hall

The effects of routine OCS activities, including air traffic, pipeline landfalls, and construction of onshore support facilities, on shorebirds in these planning areas are expected to be the same as described for the base case. The impact of an oil spill in the Hope Basin is expected to include the loss of a few hundred shorebirds with recovery within 1 year. No oil spills are assumed for the St. Matthew-Hall Planning Area.

(e) Hope Basin and Norton Basin

The effects of routine OCS activities, including air traffic, pipeline landfalls, and construction of onshore support facilities, on shorebirds under this lease sale option are expected to be the same as described for the base case. The Yukon-Kuskokwim River Delta region, which is one of the most important shorebird breeding and migratory staging areas in Alaska, is located mostly within the St. Matthew-Hall Planning Area. Although no oil spills are assumed for the St. Matthew-Hall Planning Area, a tanker oil spill of 30,000 bbl is assumed to occur from proposed development in the adjacent Norton Basin Planning Area, and this spill could contact the northern portion of the delta. If a tanker spill were to contact the northern delta, the impact on shorebirds could be higher than for other lease sale combinations because of the high concentration of shorebirds in the delta region. Impacts of spill contact with the delta could include the deaths of a few thousand shorebirds, with recovery occurring in 1-3 years. The impact of an oil spill in the Hope Basin is expected to include the loss of a few hundred shorebirds with recovery within 1 year.

(5) Diving Ducks

(a) St. George and St. Matthew-Hall

The principal changes resulting from a substitution of OCS activity in the St. Matthew-Hall area for development in Navarin Basin are the elimination of a tanker spill from the Navarin area and a shift of potentially disturbing activities northeast toward St. Lawrence Island. Activity in the St. Matthew-Hall area is assumed to occur only during the open-water period. Elimination of the Navarin Basin oil spill would preclude the most potentially severe impacts in this area discussed under the St. George Basin and Navarin option involving mortality of overwintering and migrating diving ducks. Potential oil-spill impacts eliminated by deletion of the Navarin Basin would range up to several generations for recovery of these populations to their original status. Shifting exploration activities northeastward during the open-water season is not expected to substantially alter disturbance of duck populations from that estimated for the St. George Basin and Navarin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be reduced somewhat from those estimated for the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

The principal changes resulting from a substitution of development in the Norton Basin area for that in the Navarin Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Norton area. Substituting the Norton Basin area would eliminate impacts from the Navarin Basin discussed under the St. George Basin and Navarin Basin option involving mortality of overwintering, migrating, and breeding diving ducks. Potential oil-spill impacts eliminated by deletion of the Navarin Basin would range up to several generations for recovery of these populations to their original status. However, similar impacts would be expected to occur in the Norton Basin area, because most of the species are similar and the vulnerability of ducks wintering at St. Matthew Island would be replaced by that of those wintering in the Norton Basin. This option is not expected to substantially alter disturbance of diving duck populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be approximately the same as those estimated for the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

The principal changes resulting from a substitution of development in the Hope Basin area for that in the St. George Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Hope area. Substituting the Hope Basin area would eliminate impacts from the St. George Basin discussed under the base case involving mortality of overwintering and migrating diving ducks. Potential oil-spill impacts eliminated by deletion of the St. George Basin would range up to several generations for recovery of these populations to their original status. However, similar impacts would be expected to occur in the Hope Basin area, because most of the species are similar and vulnerability of seasonally occurring ducks in the southern Bering Sea would be replaced by that of those occupying the basin. This option is not expected to substantially alter disturbance of diving duck populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery of these populations. Overall impacts resulting from this option are expected to be approximately the same as those estimated under the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

The principal changes resulting from a substitution of development in the Hope Basin and exploration in the St. Matthew-Hall area for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill in the Hope area. Substituting the Hope Basin and St. Matthew-Hall areas would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of overwintering and migrating diving ducks. Potential oil spill impacts eliminated by deletion of St. George and Navarin Basins would include those on approximately one-half of the duck populations using habitats in the vicinity of sale areas in the Bering and southern Chukchi Seas, requiring up to several generation for recovery of these populations to their former status. Overall impacts on diving ducks would be expected to decline somewhat from the St. George Basin and Navarin Basin option with the substitution of Hope Basin and St. Matthew-Hall for St. George and Navarin Basins as a result of substituting risk to populations seasonally occupying the central and southern Bering Sea for that in the southern Chukchi Sea. This option is not expected to substantially alter the disturbance of diving duck populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be somewhat reduced from those estimated under the St. George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

The principal changes resulting from a substitution of development in the Hope and Norton Basins for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea, and the occurrence of an assumed tanker spill and disturbance in both Hope and Norton areas. Substituting the Hope and Norton Basins would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of overwintering and migrating diving ducks while increasing such impacts, as well as effects on postbreeding individuals, in the Norton and Hope Basin areas. Potential oil-spill impacts eliminated by deletion of St. George and Navarin Basins would include those on approximately one-half of the duck populations seasonally occupying the Bering and Chukchi Seas, requiring up to several generations for recovery of these populations to their former status. This option is not expected to substantially alter the disturbance of diving duck populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be approximately the same as those estimated under the St. George Basin and Navarin Basin option.

(6) Geese

(a) St. George and St. Matthew-Hall

Because geese typically do not occur in substantial numbers in the Navarin Basin or St. Matthew-Hall area, overall impacts resulting from this option are expected to remain unchanged from those estimated for the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

The principal changes resulting from a substitution of development in the Norton Basin area for that in the Navarin Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Norton area. Substituting the Norton Basin area would be expected to elevate somewhat the mortality of several goose species during postbreeding and migration periods in Norton Basin. Potential oil spill impacts elevated by deletion of the Navarin Basin would require more than one generation for recovery of these populations to their original status. This option is not expected to substantially alter disturbance of goose populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be slightly increased over those estimated for the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

The principal changes resulting from a substitution of development in the Hope Basin area for that in the St. George Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Hope area. Substituting the Hope Basin area would eliminate impacts from the St. George Basin discussed under the St. George Basin and Navarin Basin option involving mortality of overwintering and migrating geese. Potential oil-spill impacts eliminated by deletion of the St. George Basin would require more than one generation for recovery of these populations to their original status. However, somewhat lower impacts would be expected to occur in the Hope Basin area, because vulnerability of seasonally occurring geese in the southern Bering Sea would be replaced by that of fewer species occupying the southern Chukchi Sea area. This option is not expected to substantially alter disturbance of goose populations from that estimated for the base case, requiring less than one generation for recovery of these populations. Overall impacts resulting from this option are expected to be slightly reduced from those estimated under the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

The principal changes resulting from a substitution of development in the Hope Basin and exploration in the St. Matthew-Hall area for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea, and the occurrence of an assumed tanker spill in the Hope area. Substituting the Hope Basin and St. Matthew-Hall area would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of overwintering and migrating geese. Potential oil spill impacts eliminated by deletion of St. George and Navarin Basins would require more than one generation for recovery of these populations to their former status. However, somewhat lower impacts would be expected to occur in the Hope Basin area, because vulnerability of seasonally-occurring geese in the southern Bering Sea would be replaced by that of fewer species occupying the southern Chukchi Sea area. This option is not expected to substantially alter the disturbance of goose populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be slightly reduced from those estimated under the St. George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

The principal changes resulting from a substitution of development in the Hope and Norton Basins for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill and disturbance in both Hope and Norton areas. Substituting the Hope and Norton Basins would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of overwintering and migrating geese while increasing such impacts in the Norton and Hope Basin areas. Potential oil-spill impacts eliminated by deletion of St. George and Navarin Basins would require more than one generation for recovery of these populations to their former status. Similar impacts would be expected to occur in the Hope and Norton Basin areas, because vulnerability of seasonally occurring geese in the southern Bering Sea would be replaced by that of fewer species occurring in greater numbers in the former areas. This option is not expected to substantially alter the disturbance of goose populations from that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery. Overall impacts resulting from this option are expected to be approximately the same as those estimated under the St. George Basin and Navarin Basin option.

(7) Bald Eagle (Alaskan Population)

(a) St. George and St. Matthew-Hall

Because bald eagles typically do not occur in the Navarin Basin or the St. Matthew-Hall area, overall impacts resulting from this option are expected to remain unchanged from those estimated for the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

Because bald eagles typically do not occur in substantial numbers in Navarin or Norton Basins, overall impacts resulting from this option are expected to remain unchanged from those estimated for the St. George Basin and Navarin Basin option.

(c) Hope Basin and Navarin Basin

The principal changes resulting from a substitution of development in the Hope Basin area for that in the St. George Basin are a shift of the assumed tanker spill and potentially disturbing activities to the Hope area. Substituting the Hope Basin area would eliminate impacts from the St. George Basin discussed under the St. George Basin and Navarin Basin option involving mortality of resident bald eagles. Potential oil-spill impacts eliminated by deletion of the St. George Basin would require more than one generation for recovery of this population to its original status. Lower impacts would be expected to occur in the Hope Basin area, because bald eagles occur in low numbers. This option is expected to result in less disturbance of the eagle population than that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery of the population. Overall impacts resulting from this option are expected to be reduced from those estimated under the St. George Basin and Navarin Basin option.

(d) Hope Basin and St. Matthew-Hall

The principal changes resulting from a substitution of development in the Hope Basin and exploration in the St. Matthew-Hall area for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea, and the occurrence of an assumed tanker spill in the Hope area. Substituting the Hope Basin and St. Matthew-Hall area would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of resident bald eagles. Potential oil spill impacts eliminated by deletion of the St. George and Navarin Basins would require more than one generation for recovery of this population to its former status. Lower impacts would be expected to occur in the Hope Basin area, because bald eagles occur in low numbers. This option is expected to result in less disturbance of the eagle population than that estimated for the

St. George Basin and Navarin Basin option, requiring less than one generation for recovery of the population. Overall impacts resulting from this option are expected to be reduced from those estimated under the St. George Basin and Navarin Basin option.

(e) Hope Basin and Norton Basin

The principal changes resulting from a substitution of development in the Hope and Norton Basins for that in the St. George and Navarin Basins are the elimination of two oil spills and potentially disturbing activities from the southern and central Bering Sea and the occurrence of an assumed tanker spill and disturbance in both Hope and Norton areas. Substituting the Hope and Norton Basins would eliminate impacts from the St. George and Navarin Basins discussed under the St. George Basin and Navarin Basin option involving mortality of resident bald eagles. areas. Potential oil spill impacts eliminated by deletion of the St. George and Navarin Basins would require more than one generation for recovery of this population to its former status. Lower impacts would be expected to occur in the Hope and Norton Basin areas because bald eagles occur in low numbers. This option is expected to result in less disturbance of the eagle population than that estimated for the St. George Basin and Navarin Basin option, requiring less than one generation for recovery of the population. Overall impacts resulting from this option are expected to be reduced from those estimated under the St. George Basin and Navarin Basin option.

f. Impacts on Fish Resources

(1) St. George Basin and St. Matthew-Hall

The similarity in fish resources between these two planning areas is limited largely to their shellfish resources, both containing stocks of the blue king crab. Groundfish also are present, but St. Matthew-Hall does not now have commercially viable numbers of this group. Salmon also may migrate through both of these planning areas; however, timing and distribution for St. Matthew-Hall is not well documented.

As assessed in the St. George Basin and Navarin Basin option analysis, routine activities, drilling discharges, and offshore construction, have little or no adverse effect on fish resources due to their limited areal extent and periodicity. The habitat and fish species affected is small when compared with the habitat and fish resources of the Alaska Region. The conclusion does not change when both of these planning areas are paired. There is no appreciable adverse effect on fish resources.

(2) St. George Basin and Norton Basin

Pacific salmon and herring are the major finfish aggregations indigenous to both the St. George and Norton Basins. The red king crab also occurs in both planning areas but in smaller numbers in Norton Sound. Groundfish, e.g., the walleye pollock, are not a large component of the fish resources of the Norton Basin.

As determined in the St. George Basin and Navarin Basin option analysis, routine drilling discharges and offshore construction do not have any appreciable adverse effect on fish resources due to their limited areas and temporal effects. The same aspects apply for the number and volume of oil spills anticipated to occur. The conclusion remains that there is no appreciable adverse effect on the fish resources of the Norton and St. George Basins from the proposed leasing program.

(3) Hope Basin and Navarin Basin

These planning areas are notable for the limited populations of fish resources of commercial importance. With these low numbers, any effects of routine drilling discharges and offshore construction and accidental oil spills would have only a very limited effect on the limited fish resources of these planning areas. The increased numbers and volumes involved essentially further affect no fish resource.

(4) Hope Basin and St. Matthew-Hall

Hope and St. Matthew-Hall Basins are remarkably alike in the relative low fish-resource values. St. Matthew-Hall has blue king crab in some number but in a limited area, while Hope Basin has little apparent fish-resource value. Lease offerings in these two areas would have no appreciable adverse effect on local fish resources, while oil spills from production in these areas would affect fish largely from tanker spills. There are, however, no tanker spills projected for St. Matthew-Hall and only one from Hope Basin production. It is unlikely that an open-ocean tanker spill would reach any large number of finfish or shellfish before dissipating.

(5) Hope and Norton Basin

Norton Basin affords some habitat for the red king crab and a migratory route for some Pacific salmon and herring. Groundfish species are limited in size and number. Hope Basin has no fish resources of economic value. As assessed by the St. George Basin and Navarin Basin option, the effects of routine drilling discharges and offshore construction would have little or no effect on fish resources. The assumed tanker spill would not affect appreciable number of finfish and shellfish or their habitat area.

g. Impacts on Coastal Habitats

WETLANDS-ESTUARIES: Potential sales that could occur in place of the St. George Basin and Navarin Basin sales are Hope Basin (instead of St. George) and either Norton Basin or St. Matthew-Hall (instead of Navarin). The effects of oil and gas activities on wetlands and estuaries from leasing in St. George and Navarin Basins is discussed under the St. George Basin and Navarin Basin option (see Section IV.D.1.a(8)). Important wetland and estuarine habitats in the Bering Sea are far removed from the offshore St. George and Navarin Basin areas. The assumed one tanker spill in each of these planning areas are expected to occur near or within Unimak Pass or offshore of the mainland and not contact important wetland and estuarine habitats along the Bering Sea coast. Oil that might reach wetland and estuarine habitats would be highly weathered and dispersed and have no long-term effects on wetlands and estuaries (see Section IV.A). The effects on wetlands and estuaries are expected to be the same as described under the base case for other planning areas in the Alaska Region. The potential impacts of 5 options are presented below.

(1) St. George Basin and St. Matthew-Hall

The effects of oil and gas activities on wetlands and estuaries from leasing in St. George Basin and St. Matthew-Hall are expected to be the same as under the St. George Basin and Navarin Basin option. Leasing in the St. Matthew-Hall Planning Area is assumed to result in no oil spills occurring or contacting wetland and estuary habitats along the Bering Sea coast. The effects on wetlands and estuaries are expected to be the same as under the St. George Basin and Navarin Basin option.

(2) St. George Basin and Norton Basin

The effects of oil and gas activities on wetlands and estuaries from leasing in St. George and Norton Basins are expected to be the same as under the St. George Basin and Navarin Basin option. The assumed tanker spill that would occur along the tanker route has a low chance (less than 5%) of contacting important wetland and estuaries in Norton Sound and on the Yukon-Kuskokwim Delta. Oil that might reach the delta is likely to be weathered and dispersed and have no long-term effects on wetlands and estuaries. This effect on wetland-estuarine habitats is the same effect expected for the St. George Basin and Navarin Basin option.

(3) Hope Basin and Navarin Basin

The effects of oil and gas activities on wetlands and estuaries from leasing in Hope Basin and Navarin Basin are expected to be about the same as under the St. George Basin and Navarin Basin option. Leasing in Hope Basin is assumed to result in one tanker spill. This spill is assumed to occur in the Bering Strait area and contaminate lagoons and adjacent saltmarsh habitat with effects on invertebrate communities persisting for more than 10 years, the same level of effects described on wetland habitats contaminated along the Beaufort and Chukchi Sea coasts under the St. George Basin and Navarin Basin option.

(4) Hope Basin and St. Matthew-Hall

The effects of oil and gas activities on wetlands and estuaries from leasing in Hope Basin and St. Matthew-Hall are expected to be the same as the St. George Basin and Navarin Basin option.

(5) Hope Basin and Norton Basin

The effects of oil and gas activities on wetlands and estuaries from leasing in Hope Basin and Norton Basin are expected to be the same as described under the St. George Basin and Navarin Basin option.

h. Impacts on Seafloor Habitats

(1) St. George Basin and St. Matthew-Hall

Since the Boulder Patch is an area of cobbles and boulders with attached kelp and invertebrate organisms located in Stefansson Sound between barrier islands and the Sagavanirktok River Delta along the coast of the Beaufort Sea, oil and gas activities in the St. George Basin and St. Matthew-Hall are not expected to affect the Boulder Patch. Therefore, impacts as a result of this option are expected to be the same as those described under the St. George Basin and Navarin Basin option.

(2) St. George Basin and Norton Basin

Since the Boulder Patch is an area of cobbles and boulders with attached kelp and invertebrate organisms located in Stefansson Sound between barrier islands and the Sagavanirktok River Delta along the coast of the Beaufort Sea, oil and gas activities in the St. George Basin and Norton are not expected to affect the Boulder Patch. Therefore, impacts as a result of this option are expected to be the same as those described under the St. George Basin and Navarin Basin option.

(3) Hope Basin and Navarin Basin

Since the Boulder Patch is an area of cobbles and boulders with attached kelp and invertebrate organisms located in Stefansson Sound between barrier islands and the Sagavanirktok River Delta along the coast of the Beaufort Sea, oil and gas activities in the Hope Basin and Navarin are not expected to affect the Boulder Patch. Therefore, impacts as a result of this option are expected to be the same as those described under the St. George Basin and Navarin Basin option.

(4) Hope Basin and St. Matthew-Hall

Since the Boulder Patch is an area of cobbles and boulders with attached kelp and invertebrate organisms located in Stefansson Sound between barrier islands and the Sagavanirktok River Delta along the coast of the Beaufort Sea, oil and gas activities in the Hope Basin and St. Matthew-Hall are not expected to affect the Boulder Patch. Therefore, impacts as a result of this option are expected to be the same as those described under the St. George Basin and Navarin Basin option.

(5) Hope Basin and Norton Basin

Since the Boulder Patch is an area of cobbles and boulders with attached kelp and invertebrate organisms located in Stefansson Sound between barrier islands and the Sagavanirktok River Delta along the coast of the Beaufort Sea, oil and gas activities in the Hope Basin and St. Matthew-Hall are not expected to affect the Boulder Patch. Therefore, impacts as a result of this option are expected to be the same as those described under the St. George Basin and Navarin Basin option.

i. Impacts on Coastal Communities

(1) Employment And Demography

Potential sales that could occur in place of the St. George Basin and Navarin Basin sales are Hope Basin (instead of St. George) and either Norton Basin or St. Matthew-Hall (instead of Navarin). The potential impacts of 5 options are presented below. All assumptions made for the analysis of impacts on employment and demography are described in the St. George Basin and Navarin Basin option.

(a) St. George Basin and St. Matthew-Hall

For the St. George Basin, impacts will be the same as for the St. George Basin and Navarin Basin option.

For St. Matthew-Hall, it is assumed that Nome is the regional center that would be the support base for OCS activity. For Nome for the St. Matthew-Hall area, local employment generated would increase less than 5 percent for less than 2 years, and no sector of the local labor force changes more than 10 percent. Population increases would be in the same range as the employment increases for all the local areas. An oil spill would generate up to 15 jobs in the closest regional center for up to 1 month.

(b) St. George Basin and Norton Basin

For the St. George Basin, impacts will be the same as for the St. George Basin and Navarin Basin option.

Nome is assumed to be the regional center for Norton Basin OCS activity. For Nome, local employment generated by OCS activity will be more than 5 percent but not more than 10 percent of projected employment for 2 to 5 years, and no one sector of the local labor force will change by more than 10 percent. Population increases would be in the same range as the employment increases for all the local areas. An oil spill would generate up to 15 jobs in the closest regional center for up to 1 month.

(c) Hope Basin and Navarin Basin

Impacts for the Navarin Basin will be the same as the St. George Basin and Navarin Basin option.

Kotzebue is assumed to be the regional center for Hope Basin OCS activity. For Kotzebue, local employment generated by OCS activity will be more than 5 percent but not more than 10 percent of projected employment for 2 to 5 years, and no one sector of the local labor force will change by more than 10 percent. Population increases would be in the same range as the employment increases for all the local areas. An oil spill would generate up to 15 jobs in the closest regional center for up to 1 month.

(d) Hope Basin and St. Matthew-Hall

For Kotzebue, the regional center for the Hope Basin sale, local employment generated by OCS activity will be more than 5 percent but not more than 10 percent of projected employment for 2 to 5 years, and no one sector of the local labor force will change by more than 10 percent.

For Nome, regional center for the St. Matthew-Hall Basin, local employment generated would increase less than 5 percent for less than 2 years; and no sector of the local labor force changes more than 10 percent. Population increases would be in the same range as the employment increases for all the local areas. An oil spill would generate up to 15 jobs in the closest regional center for up to 1 month.

(e) Hope Basin and Norton Basin

For regional centers for the Hope Basin and Norton Basin sales, local employment generated by OCS activity will be more than 5 percent but not more than 10 percent of projected employment for 2 to 5 years, and no one sector of the local labor force will change by more than 10 percent. Population increases would be in the same range as the employment increases for all the local areas. An oil spill would generate up to 15 jobs in the closest regional center for up to 1 month.

(2) Land Use

(a) St. George Basin and St. Matthew-Hall

Under this alternative, support and supply operations would be conducted from Nome, the Pribilof Islands, or Unalaska. No additional land use requirements are forecast for the Kuskokwim Delta or for the southwestern Alaskan shore. Because the St. Matthew-Hall option, substituted for that of the Navarin Basin, also did not require either a pipeline landfall or immediately adjacent offshore-support facilities, the overall land use requirements will be virtually the same as that of the St. George Basin and Navarin Basin option.

(b) St. George Basin and Norton Basin

All land use and port usage for these two sale areas were analyzed in the St. George Basin and Navarin Basin option. Conclusion reached in the St. George Basin and Navarin Basin option will not change as a result of this option.

(c) Hope Basin and Navarin Basin

The Hope Basin and Navarin Basin option would increase the St. George Basin and Navarin Basin option effect on land use. Effects due to a sale in the Navarin Basin have been analyzed in the St. George Basin and Navarin Basin option. However, the substitution of a sale in the Hope Basin for one in St. George would increase land use requirements. Failure to hold a St. George lease sale would not obviate the need for support bases on the Pribilofs, as bases on these islands would be necessary to support the far offshore drilling activities in the Navarin Basin. Development in the Hope Basin would not only cause the establishment of a support base in the Hope Basin area (probably Kotzebue) but also would result in the construction of an oil terminal. Thus, this option has the effect of not reducing land use requirements from those of the St. George Basin and Navarin Basin option but rather increasing them due to the need for additional onshore infrastructure.

(d) Hope Basin and St. Matthew-Hall

The Hope Basin and St. Matthew-Hall option would slightly increase land use effects from those forecast for the St. George Basin and Navarin Basin option. Elimination of the Navarin and St. George lease sales would have the effect of eliminating the need for large support and supply bases located on the Pribilof Islands. However, the Hope Basin sale would add a support base and a tanker-loading terminal for an overall net increase in land use.

(e) Hope Basin and Norton Basin

Land use effects for a sale in the Norton Basin have been analyzed in the St. George Basin and Navarin Basin option. Development in the Hope Basin would require establishing a tanker-loading terminal and a support base. This option would preclude the construction of a support base on the Pribilof islands. Overall land use effects for this option would be slightly higher due to the increased land use required by the development of a tanker-loading terminal.

(3) Transportation Systems

(a) St. George Basin and St. Matthew-Hall

This option would result in a reduction of air and marine-vessel traffic impacts from that forecast for the St. George Basin and Navarin Basin option. Effects resulting from leasing in the St. George Basin were already considered in the St. George Basin and Navarin Basin option. For the St. Matthew-Hall lease area, only minimal exploratory efforts are expected to occur with only small-scale transportation activities. This is in contrast to the extensive air- and marine-support effort that would accompany exploration and development efforts in the Navarin Basin. Also sharply reduced in this option would be the tanker traffic that would issue from the Bering Sea. This again is due to the negligible resources associated with the St. Matthew-Hall Planning Area.

(b) St. George Basin and Norton Basin

Overall impacts will remain the same with this option as those of the St. George Basin and Navarin Basin option. However, the geographic emphasis of the effects will change. Fewer marine- and air-support operations would issue from the Pribilofs; in their place would be an increase in support operations issuing from Nome. Total tanker traffic passing out of the Bering Sea through the Unimak Pass would only slightly increase.

(c) Hope Basin and Navarin Basin

Overall impacts will remain the same with this option as those of the St. George Basin and Navarin Basin option. However, the geographical emphasis of the effects will shift. Tanker traffic and support operations will shift to the northwest coast of Alaska, and the importance of the Pribilofs as a support-base site will be diminished.

(d) Hope Basin and St. Matthew-Hall

This option would cause lower transportation system impacts than those associated with the St. George Basin and Navarin Basin option. Resources in the St. Matthew-Hall Planning Area are negligible as would be any transportation efforts associated with the exploration of those resources. Other petroleum-related marine and air operations will shift from the central Bering Sea to the northwest coast of Alaska around Kotzebue. Total transportation-related impacts are expected to be halved by this option.

(e) Hope Basin and Norton Basin

Overall transportation system impacts for this option are expected to be the same as those forecast for the St. George Basin and Navarin Basin option. However, the geographical emphasis of the effects is expected to shift from the central Bering Sea to Norton Sound and north of the Sound around the Kotzebue region. Total tanker traffic leaving the Bering Sea through the Unimak Pass is expected to be the same in this option as the St. George Basin and Navarin Basin option.

(4) Impacts on Sociocultural Systems

(a) St. George Basin and St. Matthew-Hall

Effects on sociocultural systems would be the same as the St. George Basin and Navarin Basin option. There would be no appreciable impacts from the St. Matthew-Hall area because no development or production is estimated to occur. The difference from the St. George Basin and Navarin Basin option with this option would be to eliminate those effects on St. Lawrence Island sociocultural systems related to walrus harvest disruptions for walrus impacted by Navarin Basin activities and to reduce the impacts on Pribilof Islands residents due to disruptions of fur seal harvests from the tankering of Navarin Basin oil and on residents of the Alaska Peninsula and Bristol Bay due to a spill of Navarin Basin oil occurring near Unimak Pass.

(b) St. George Basin and Norton Basin

Effects on sociocultural systems would be the same as the St. George Basin and Navarin Basin option for the St. George Basin. Substituting Norton Basin for the Navarin Basin would not change the impacting agents considered, since subsistence harvest disruptions due primarily to oil spills are the primary impacting agents on sociocultural systems in the Bering Sea area. Both Norton and Navarin Basins would contribute to sociocultural effects on St. Lawrence Island relative to walrus harvest disruptions, to impacts on Pribilof Islands residents because of fur seal harvest disruptions, and to effects on Alaska Peninsula and Bristol Bay residents because of effects to their subsistence from the tankering of Navarin Basin crude. The primary difference from the St. George Basin and Navarin Basin option for this option would be to introduce effects within Norton Basin itself. Considering the geography of potential lease sites, effects on the sociocultural systems of St. Lawrence Island would be expected to increase substantially with the introduction of Norton Basin as a sale prospect. The sociocultural systems of Bering Strait communities in Alaska and the former USSR would be effected if their subsistence were impacted from lease site or tankering oil spills.

(c) Hope Basin and Navarin Basin

The sociocultural systems of Hope Basin communities would be effected if subsistence harvests were disrupted by OCS activities in Hope Basin or tankering oil spills. Effects on migrating walruses from Hope Basin sales would impact sociocultural systems of Chukchi and Beaufort Sea communities and possibly elsewhere walrus harvests are important for subsistence. The tankering of Hope Basin oil would affect sociocultural systems on St. Lawrence Island if walrus harvests were disrupted, on the Pribilof Islands if fur seal harvests were affected, and on the Alaska Peninsula and in Bristol Bay if a spill near Unimak Pass affected subsistence harvests. Effects on sociocultural systems would be the same as the St. George Basin and Navarin Basin option for Navarin Basin. Substituting Hope Basin for St. George Basin sales would decrease effects on Pribilof Islands sociocultural systems with a decrease in risk to fur seal harvests but increase effects on sociocultural systems based on the subsistence harvest of walruses.

(d) Hope Basin and St. Matthew-Hall

The sociocultural systems of Hope Basin communities would be affected if subsistence harvests were disrupted by OCS activities in Hope Basin or tankering oil spills. Effects on migrating walruses from Hope Basin sales would impact sociocultural systems from the Chukchi and Beaufort Seas and possibly elsewhere walrus harvests are important for subsistence. The tankering of Hope Basin oil would affect sociocultural systems on St. Lawrence Island if walrus harvests were disrupted, on the Pribilof Islands if fur seal harvests were affected, and on the Alaska Peninsula and in Bristol Bay if a spill near Unimak Pass affected subsistence harvests. Substituting Hope Basin for St. George Basin sales would increase effects on sociocultural systems based on the subsistence harvest of walruses and decrease effects on Pribilof Islands sociocultural systems with a decrease in risk to fur seal harvests. There would be no appreciable impacts from the St. Matthew-Hall area because no development or production is estimated to occur. The difference from the St. George Basin and Navarin Basin option with this option would be to (1) eliminate those effects on St. Lawrence Island sociocultural systems related to walrus-harvest disruptions for walruses impacted by Navarin Basin activities and (2) reduce the impacts on Pribilof Islands residents due to disruptions of fur seal harvests from the tankering of Navarin Basin oil and on residents of the Alaska Peninsula and Bristol Bay due to a spill of Navarin Basin oil occurring near Unimak Pass.

(e) Hope Basin and Norton Basin

The sociocultural systems of Hope Basin communities would be affected if subsistence harvests were disrupted by OCS activities in Hope Basin or tankering oil spills. Effects on migrating walruses from Hope Basin sales would impact sociocultural systems from the Chukchi and Beaufort Seas and possibly elsewhere walrus harvests are important for subsistence. The tankering of Hope Basin oil would affect sociocultural systems on St. Lawrence Island if walrus harvests were disrupted, on the Pribilof Islands if fur seal harvests were affected, and on the Alaska Peninsula and in Bristol Bay if a spill near Unimak Pass affected subsistence harvests. Substituting Hope Basin for St. George Basin sales would increase effects on sociocultural systems based on the subsistence harvest of walrus and decrease effects on Pribilof Islands sociocultural systems with a decrease in risk to fur seal harvests.

Substituting Norton Basin for the Navarin Basin would not change the impacting agents considered because subsistence-harvest disruptions due primarily to oil spills are the primary impacting agents on sociocultural systems in the Bering Sea area. Both Norton and Navarin Basins would contribute to sociocultural effects on St. Lawrence Island relative to walrus-harvest disruptions, to impacts on Pribilof Islands residents because of fur seal harvest disruptions, and to effects on Alaska Peninsula and Bristol Bay residents because of effects on their subsistence from the tankering of Navarin Basin crude.

j. Impacts on Fisheries

Potential sales that could occur in place of the St. George Basin and Navarin Basin sales are Hope Basin (instead of St. George) and either Norton Basin or St. Matthew-Hall (instead of Navarin). The potential impacts of 5 options are presented below. All assumptions made for the analysis of commercial fishing are described in the St. George Basin and Navarin Basin option.

(1) St. George Basin and St. Matthew-Hall

For St. George Basin the impacts will be the same as the St. George Basin and Navarin Basin option. For St. Matthew-Hall, the impacts are anticipated to be the same as for the St. George Basin, which are described as follows.

It is expected the impact on commercial fishing is loss of catch and direct employment and damage or loss of fishing gear in the range of up to 5 percent and loss of secondary employment in the range of up to 5 percent. Costs to commercial fishermen are expected to increase up to 5 percent for support services, infrastructure, materials, and labor and no more than 10 percent for space onshore. These impacts are expected to last for as many seasons as there is OCS activity.

As a result of an oil spill, commercial fishing is expected to be affected for about 30 days for an area as large as several thousand square kilometers. For about 30 days, the commercial fisheries would have a up to 5 percent loss of catch and up to 5 percent loss of direct employment and indirect employment; damage or loss of fishing gear fouled by oil could be up to 5 percent.

(2) St. George Basin and Norton Basin

For the St. George Basin, the impacts will be the same as for the St. George Basin and Navarin Basin option. For the Norton Basin, the impacts will be the same as for St. George Basin, which is described above.

(3) Hope Basin and Navarin Basin

For the Navarin Basin, the impacts will be the same as for the St. George Basin and Navarin Basin option. For the Hope Basin, the impacts will be the same as described above for the St. George Basin.

(4) Hope Basin and St. Matthew-Hall

The impacts for these two sale areas are the same as described above for the St. George Basin.

(5) Hope Basin and Norton Basin

The impacts for these two sale areas are the same as described above for the St. George Basin.

k. Impacts on Subsistence

(1) St. George Basin and St. Matthew-Hall

Effects on subsistence would be the same as the St. George Basin and Navarin Basin option for the St. George Basin. There would be no appreciable impacts from the St. Matthew-Hall area because no development or production is estimated to occur. The difference from the St. George Basin and Navarin Basin option with this option would be to eliminate those effects on St. Lawrence Island subsistence related to walrus harvests if walrus were impacted by Navarin Basin activities and to reduce the impacts on Pribilof Islands fur seal subsistence and subsistence activities on the Alaska Peninsula and in Bristol Bay from the tankering of Navarin Basin crude.

(2) St. George Basin and Norton Basin

Effects on subsistence would be the same as the St. George Basin and Navarin Basin option for the St. George Basin. Substituting Norton Basin for the Navarin Basin would not change the types of impacts considered, since both areas would contribute to effects on St. Lawrence Island subsistence related to walrus harvests, to impacts on Pribilof Islands fur seal subsistence, and to effects on Alaska Peninsula and Bristol Bay subsistence from the tankering of Navarin Basin crude. The primary difference from the St. George Basin and Navarin Basin option for this option would be to introduce effects within Norton Basin, especially with potential offshore leases near St. Lawrence Island and the Bering Strait.

(3) Hope Basin and Navarin Basin

Hope Basin and Chukchi Sea subsistence would be effected by oil spills. Effects on migrating walrus from Hope Basin sales would impact subsistence for Chukchi and Beaufort Sea communities and possibly elsewhere walrus are used for subsistence. The tankering of Hope Basin oil would effect subsistence on St. Lawrence Island if walrus were impacted, Pribilof Islands subsistence if fur seals were effected, and subsistence on the Alaska Peninsula and in Bristol Bay if a spill occurred near Unimak Pass. Effects on subsistence would be the same as the St. George Basin and Navarin Basin option for the Navarin Basin. Substituting Hope Basin for St. George Basin sales would reduce risk to subsistence on the Pribilof Islands but introduce additional risk to subsistence based on walrus harvest.

(4) Hope Basin and St. Matthew-Hall

Hope Basin and Chukchi Sea subsistence would be effected by oil spills. Effects on migrating walrus from Hope Basin sales would impact subsistence for Chukchi and Beaufort Sea communities and possibly elsewhere walrus are used for subsistence. The tankering of Hope Basin oil would effect subsistence on St. Lawrence Island if walrus were impacted, Pribilof Islands subsistence if fur seals were effected, and subsistence on the Alaska Peninsula and in Bristol Bay if a spill occurred near Unimak Pass. There would be no appreciable impacts from the St. Matthew-Hall area because no development or production is estimated to occur. The difference from the St. George Basin and Navarin Basin option with this option would be to eliminate those effects to St. Lawrence Island subsistence related to walrus harvests if walrus were impacted by Navarin Basin activities, eliminate those effects to Pribilof Islands subsistence related to fur seal harvests if fur seals were impacted by St. George Basin activities, introduce effects on North Slope subsistence (and possibly elsewhere) if walrus were impacted by Hope Basin activities, and reduce impacts from tankering to subsistence on St. Lawrence Island, the Pribilof Islands, on the Alaska Peninsula, and in Bristol Bay as a result of non-production in the St. Matthew-Hall area.

(5) Hope Basin and Norton Basin

Hope Basin and Chukchi Sea subsistence would be effected by oil spills. Effects on migrating walrus from Hope Basin sales would impact subsistence for Chukchi and Beaufort Sea communities and possibly elsewhere walrus are used for subsistence. The tankering of Hope Basin oil would effect subsistence on St. Lawrence Island if walrus were impacted, Pribilof Islands subsistence if fur seals were effected, and subsistence on the Alaska Peninsula and in Bristol Bay if a spill occurred near Unimak Pass. Substituting Norton Basin for the Navarin Basin would not change the types of impacts considered, since both areas would contribute to effects on St. Lawrence Island subsistence related to walrus harvests, to impacts on Pribilof Islands fur seal subsistence, and to effects on Alaska Peninsula and Bristol Bay subsistence from the tankering of Navarin Basin crude. The primary difference from the St. George Basin and Navarin Basin option for this option would be to introduce effects within Norton Basin.

I. Impacts on Archaeological Resources

Potential sales that could occur in place of the St. George Basin and Navarin Basin sales are Hope Basin (instead of St. George) and either Norton Basin or St. Matthew-Hall (instead of Navarin). The potential impacts of 5 options are presented below.

(1) St. George Basin and St. Matthew-Hall

The effects of oil and gas activities on archaeological sites and shipwrecks from leasing in St. George Basin and St. Matthew-Hall are expected to be the same as under the St. George Basin and Navarin Basin option. Leasing in the St. Matthew-Hall Planning Area is assumed to result in no oil spills occurring or contacting ancient human sites or shipwrecks in the planning area. Disturbance from oil exploration only in St. Matthew-Hall Basin might have short-term, one-season effects on archaeological sites along vessel-traffic routes to and from the drill platform if the oil got into the water column. This effect would be the same as disturbance effects expected to occur in other planning areas in the Alaska Region where archaeological sites or shipwrecks occur.

(2) St. George Basin and Norton Basin

The effects of oil and gas activities on archaeological sites and shipwrecks from leasing in St. George and Norton Basins are expected to be the same as under the St. George Basin and Navarin Basin option. The assumed tanker spill that would occur along the tanker route has a low chance (less than 5%) of contacting important ancient sites or shipwrecks in Norton Sound and in the Yukon-Kuskokwim Delta. Oil that might contact the archaeological sites offshore if oil got into the water column is expected to have an effect on less than 1 percent of the sites or wrecks and would have no long-term effects on the sites or wrecks. This effect is no different than the effect of the St. George Basin and Navarin Basin option.

(3) Hope Basin and Navarin Basin

The effects of oil and gas activities on archaeological sites and shipwrecks from leasing in Hope Basin and Navarin Basin are expected to be about the same as under the St. George Basin and Navarin Basin option. Leasing in Hope Basin is assumed to result one tanker spill. This spill is assumed to occur in the Bering Strait area and contaminate the water system during the spring, but only less than 1 percent of the archaeological resources are expected to be affected. This effect would be the same as the effects expected under the St. George Basin and Navarin Basin option.

(4) Hope Basin and St. Matthew-Hall

The effects of oil and gas activities on archaeological sites and shipwrecks from leasing in Hope Basin and St. Matthew-Hall are expected to be the same as under the St. George Basin and Navarin Basin option (see discussion above under Hope Basin and Navarin Basin and discussion under St. George Basin and St. Matthew-Hall).

(5) Hope Basin and Norton Basin

The effects of oil and gas activities on archaeological resources from leasing in Hope Basin and Norton Basin are expected to be the same as described under the St. George Basin and Navarin Basin option (see discussion above under Hope Basin and Navarin Basin and discussion under St. George Basin and Norton Basin).

G

Comment Letters

Federal Government

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE DEVELOPMENT TEST CENTER (AFSC)
EGLIN AIR FORCE BASE, FLORIDA 32542-5000

25 OCT 1991

REPLY TO ATTN OF: XR

SUBJECT: OCS Natural Gas and Oil Resource Management Comprehensive Program

TO: Department of the Interior
Minerals Management Service
ATTN: Branch of Environmental Projects Coordination
381 Elden Street
Herndon, VA 22070-48817

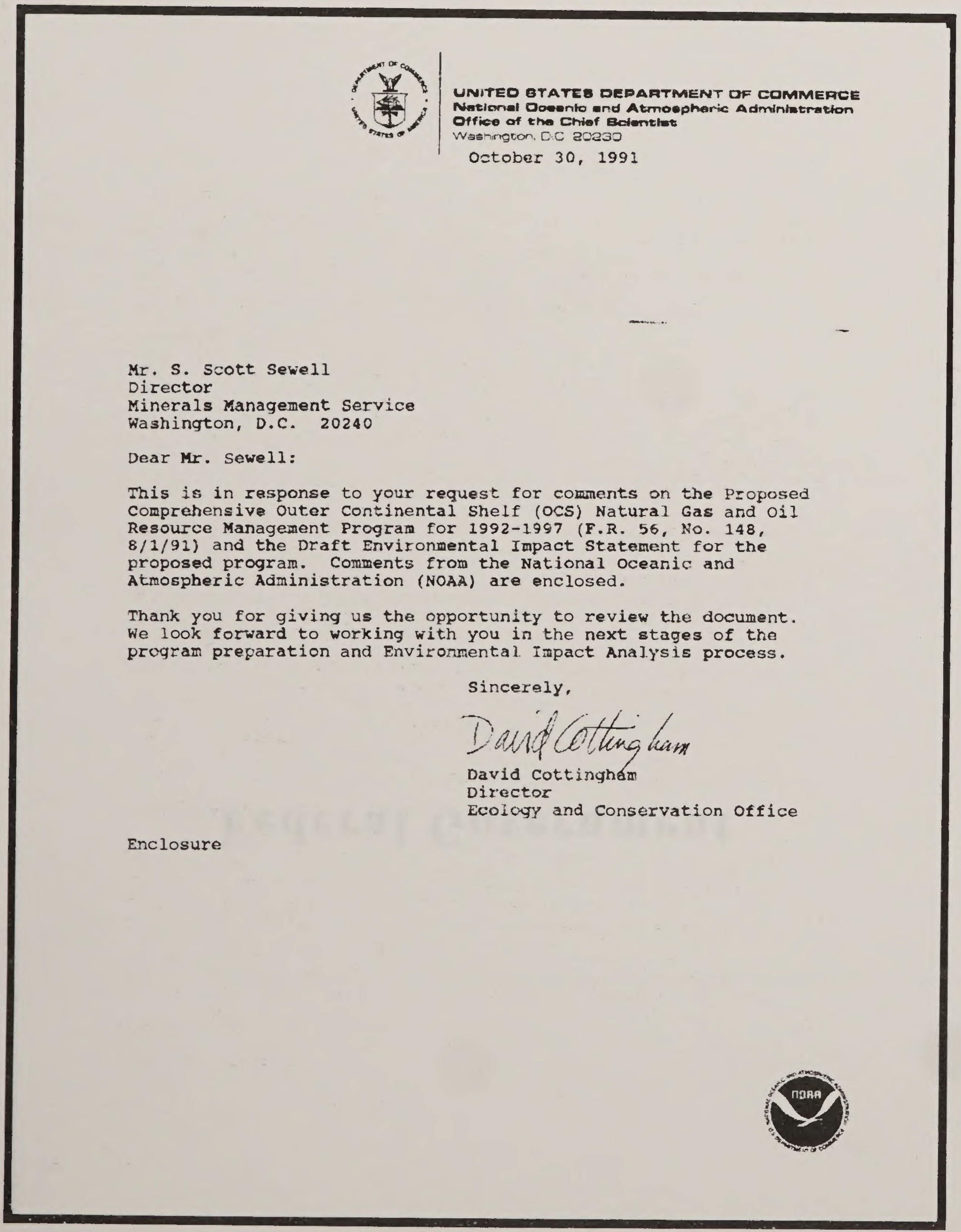
1. We have reviewed the "OCS Natural Gas and Oil Resource Management Comprehensive Program 1992-1997" proposal and associated "Draft Environmental Impact Statement" dated July 1991.

2. Our experience with the current joint use MOU and Military Areas Stipulation has been satisfactory. It is our understanding that no changes to the current agreements and stipulations are proposed.

3. The AFDTC initial point of contact for minerals management issues is AFDTC/XR, Eglin AFB FL 32542. If you have any questions or need further information, please contact Mr D. Pugh or Mr R. Woodard at 904-882-3899/3890.

Robert J Arnold

ROBERT J. ARNOLD
Chief, Corporate Plans Office



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of the Chief Scientist
Washington, D.C. 20230

October 30, 1991

Mr. S. Scott Sewell
Director
Minerals Management Service
Washington, D.C. 20240

Dear Mr. Sewell:

This is in response to your request for comments on the Proposed Comprehensive Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program for 1992-1997 (F.R. 56, No. 148, 8/1/91) and the Draft Environmental Impact Statement for the proposed program. Comments from the National Oceanic and Atmospheric Administration (NOAA) are enclosed.

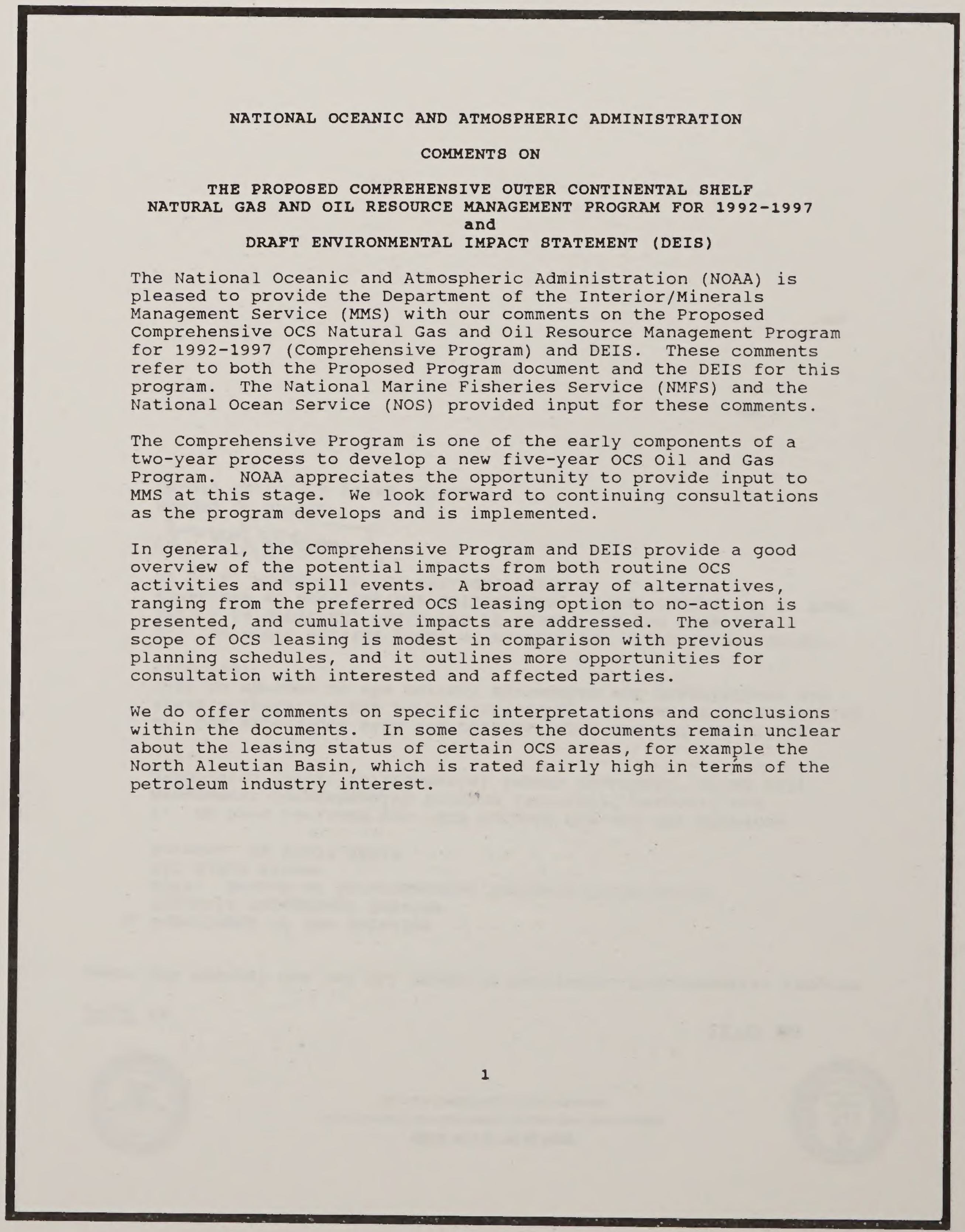
Thank you for giving us the opportunity to review the document. We look forward to working with you in the next stages of the program preparation and Environmental Impact Analysis process.

Sincerely,

David Cottingham

David Cottingham
Director
Ecology and Conservation Office

Enclosure



NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

COMMENTS ON

THE PROPOSED COMPREHENSIVE OUTER CONTINENTAL SHELF NATURAL GAS AND OIL RESOURCE MANAGEMENT PROGRAM FOR 1992-1997
and
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

The National Oceanic and Atmospheric Administration (NOAA) is pleased to provide the Department of the Interior/Minerals Management Service (MMS) with our comments on the Proposed Comprehensive OCS Natural Gas and Oil Resource Management Program for 1992-1997 (Comprehensive Program) and DEIS. These comments refer to both the Proposed Program document and the DEIS for this program. The National Marine Fisheries Service (NMFS) and the National Ocean Service (NOS) provided input for these comments.

The Comprehensive Program is one of the early components of a two-year process to develop a new five-year OCS Oil and Gas Program. NOAA appreciates the opportunity to provide input to MMS at this stage. We look forward to continuing consultations as the program develops and is implemented.

In general, the Comprehensive Program and DEIS provide a good overview of the potential impacts from both routine OCS activities and spill events. A broad array of alternatives, ranging from the preferred OCS leasing option to no-action is presented, and cumulative impacts are addressed. The overall scope of OCS leasing is modest in comparison with previous planning schedules, and it outlines more opportunities for consultation with interested and affected parties.

We do offer comments on specific interpretations and conclusions within the documents. In some cases the documents remain unclear about the leasing status of certain OCS areas, for example the North Aleutian Basin, which is rated fairly high in terms of the petroleum industry interest.

COMPREHENSIVE PROGRAM 1992-1997

GENERAL COMMENTS

Energy Conservation and Alternatives

The MMS analysis does not explore the merits of various forms of energy conservation to achieve the purported national security goal. Many sources indicate that the saving in energy consumption realized by various conservation practices would make petroleum production from offshore leasing (and ANWR) insignificant. Such concerns should be addressed or, at least, recognized. Further, the availability and economics of domestic natural gas resources should be examined in depth within the context of OCS leasing scenarios.

Environmental Studies Program (ESP)

We have several suggestions that might improve the quality, timeliness, and usefulness of ESP products. To the degree feasible, MMS should promote the publication of MMS-sponsored research in peer-review journals. This would improve product quality by raising the standards of publication and review. MMS should continue to coordinate the development of large environmental databases with state and federal resource agencies.

In particular, we support consideration of the development of a standardized geographical information system (GIS) to collate existing environmental and leasing information (Program Document Page 157). There may be unique opportunities to develop Federal environmental databases and GIS systems through cooperation among agencies including the U.S. Geological Survey, U.S. Fish and Wildlife Service, the MMS, the U.S. Forest Service, and NOAA.

The MMS ESP in Alaska, particularly in the implementation of the planned studies, is ineffective. The Regional Studies Plan (RSP), now prepared every two years, is largely a misleading document. Due to lack of funding, changing priorities, or other reasons, the scope and objectives of individual studies are almost never achieved. It is essential that both the OCS leasing proposals and environmental studies are maintained with a degree of continuity to assure that the needed information becomes available in a timely manner.

Marine Productivity and Environmental Sensitivity

The Comprehensive Plan (e.g., Table 4 of the summary document) attempts to classify different OCS areas on the basis of phytoplankton production. However, the classification is without scientific merit, and will be misleading to a reader who is not knowledgeable on the subject.

Measured values of daily primary productivity in the northern Bering-southern Chukchi sea in summer are between 2 to 16 gC/m2 -- among the highest in the world. The annual production, estimated for a 150-day, ice- free, growing season between June and October, for the region influenced by the Gulf of Anadyr water mass is over 300 gC/m2, also among the highest in the world. Within the Chukchi Sea, there is a gradual decline in primary productivity northward, with an estimated 50 gC/m2 off Barrow, Alaska. Thus there is no basis to rate the northern Bering and Chukchi Sea areas lower in productivity than, for example, Gulf of Alaska or off the Washington-Oregon coast. Long-term average annual productivity off the Washington-Oregon coast is less than 60 gC/m2; and for Weather Station "P," it is 48 gC/m2. For the Beaufort Sea, the limited amount of available data suggests a marked east-west trend in primary productivity, with the eastern Beaufort Sea presumably being more productive by a factor of 2 to 3. Data do not exist to rate phytoplankton productivity of the Shumagin and St. Matthew-Hall areas.

Information provided in Table 4 notwithstanding, it is much more significant, in terms of environmental assessments and protection strategies, to describe energy transfer pathways and efficiencies within and between OCS areas that lead to valued ecosystem components as a measure of biological productivity. Phytoplankton productivity data alone, even when accurately portrayed, are insufficient to rate biological productivities of different regions.

With regard to classification according to "relative environmental sensitivity" the documents include numerous caveats and reservations. Tabulated information showing such classification must be viewed within such constraints and with caution.

Appendix 10 of the program document estimates relative marine productivity and environmental sensitivity of the OCS planning areas in accordance with section 18(a)(2)(G) of the OCS Lands Act. Primary productivity, not normalized per unit area, is the measure MMS uses to compare "relative marine productivity". Normalized primary productivity more accurately reflects the potential secondary productivity and uniqueness of a region. Secondary productivity depends to a great extent on geographically and seasonally predictable primary productivity peaks, such as those caused by spring and fall phytoplankton blooms, and seasonal coastal upwelling.

MMS' method of comparing productivity, by not normalizing to unit area, accounting for spatiotemporal variability, or considering fisheries productivity, would rank the oceanic gyres above coastal shelf and estuary habitat, simply because the oceanic gyres cover such expansive areas. Clearly, this approach would underestimate the importance and uniqueness of coastal shelf and estuary habitats. This approach is counter to the general approach used by the oceanographic community for evaluation of relative marine productivity, and may also be counter to the original intent of OCSLA section 18(a)(2)(G).

The relative sensitivity analysis in Appendix 10A-10B is based on the comparison of linear or aereal abundance of various habitat types, each with different sensitivity coefficients, among the different OCS planning areas. This approach fails to account for many factors that would increase a given area's environmental sensitivity, such as the presence of endangered species. Other factors that should be considered include the spatial distribution of sensitive habitats, species diversity and abundance, and the presence of unique or rare communities or species. Thus, though the general discussion in Appendix 10C gives a good overview of the factors that should be considered while evaluating relative environmental sensitivity, the actual analysis used is an oversimplification.

Area Evaluation and Decision Process

This process is intended to provide more opportunities for consultation and review than was the case before. This is a welcome change. However, this process, as described, lacks specificity. The text outlining criteria for decision-making is essentially boiler-plate material, restating MMS roles and responsibilities. At least in the case of Alaska OCS area during the past decade, MMS has not succeeded in fostering "scientific completeness and quality of information." In our view, there is clear need to involve a panel of scientists who can impart independent and informed judgement on the status and adequacy of scientific and technical information. It is also unclear if there is "No Sale" step or consideration in the process.

COMMENTS BY REGION

Alaska

We have no objections to the proposed planning areas and sale/study schedule for Alaska. However, the document is weak in presenting the several coastal buffer alternatives. It is not clear why these are proposed or what environmental/social advantages they offer. The document does little to describe what would happen to frontier areas, such as Kodiak or Shumagins, that are proposed for studies, but not leasing. The document should discuss the intent of the ESP with respect to these areas, and present the likelihood of any funding for research given study priorities and budget limitations. It may be misleading to suggest these areas would receive significant study effort during the 5 year program. In fact, MMS may have difficulty funding many of the studies for areas that are intended to be leased under the Program.

Eight lease sales are planned for the Alaska OCS Region between 1992-1997. Table 1 (Comprehensive Program, Executive Summary) indicates that environmental studies are planned by the MMS in each area. It is well known that few, if any, studies will be funded in most of these areas.

The MMS maintains that they are scaling down the leasing program off Alaska. Nevertheless, the currently projected lease sales off Alaska will account for more than one half the acreage being offered nationally (just to 1995). Unfortunately, it is the overall scope of the ESP that has been scaled down very considerably in recent years. This trend will ultimately affect identification of potential threats and resolution of resource-use conflicts, which in some Alaska OCS areas are extremely profound.

Pacific

Eighty-seven tracts are considered for leasing in the Southern California planning area. Northern California will not be considered for leasing, but may merit further environmental studies. Comments provided by State agencies and State elected officials, as summarized in Appendix 1 of the Program Document, suggest that many of the 87 tracts may not be suitable for leasing. Representative Panetta's suggestion that the Santa Maria Basin and Santa Barbara Channel be evaluated as separate planning areas may be warranted, if the areas can be differentiated with respect to physical oceanographic, fisheries, or ecological characteristics.

Atlantic/Gulf of Mexico

The Comprehensive Program document incorporates previous NOAA comments and recommendations regarding lease exclusion in areas south of 26°N and east of 86°W. We recommend that the area north of 26°N and west of 86°W be placed in Category 2 and that the area south of 26°N and east of 86°W be placed in Category 3.

We continue to recommend that MMS consider expanding the coastal buffer extending from Cape San Blas to Pensacola, Florida, to provide greater certainty that nearshore coastal resources and estuarine fishery habitat would be protected. We continue to recommend that a larger buffer be placed around the Florida Middle Grounds. Such action would better conserve this important fishery habitat.

We are concerned that the Environmental Risk Analysis described in the Executive Summary cannot be used to effectively assess risks to the marine environment unless state-of-the-art information on the physical and biological environment in a particular region/block is available. For example, page 141 of the Comprehensive Program describes the Manteo Exploration Unit in the South/Mid Atlantic off Cape Hatteras, North Carolina, as potentially one of the largest fields in the United States. Concurrently, the document describes the marine biota of the South Atlantic Region (Table 17) as the second most sensitive to petroleum development. Yet, we noted several instances in the DEIS where the uniqueness of the Gulf Stream frontal zone, one of the most important oceanographic features in the South/Mid Atlantic Region, was not adequately addressed. This highlights the need to obtain additional information on these areas prior to additional leasing in the Manteo Exploratory Unit described in the Proposed Future Direction discussion contained on page 183.

DRAFT ENVIRONMENTAL IMPACT STATEMENT

GENERAL COMMENTS

The DEIS states that the most significant impact associated with the proposed action is the potential for oil spills in the marine environment. We agree, and believe Appendix D of the DEIS provides an excellent discussion on capability of the industry or government to respond to an oil spill in Arctic waters, particularly under broken or fast-ice conditions.

However, it is often difficult to review the DEIS within the context of the Comprehensive Program document which it supports. There are often differences between these documents or important omissions. For example, the Comprehensive Program describes a plan for leasing in 15 areas (p. 47) while the DEIS states leasing will occur in 12 (p. I-1).

Sensitive Areas

Impacts from routine operations or small oil spills, while perhaps not regionally significant, warrant careful consideration, particularly in biologically sensitive areas. An area might be considered biologically sensitive because it is critical habitat for threatened or endangered species, because it is particularly susceptible to the types of impacts caused by routine OCS operations, or because it is already severely degraded. The documents do not discuss the specific criteria to determine those areas that are too sensitive to be subjected to OCS impacts.

For example, page III-141 of the DEIS lists several areas in the Santa Barbara Channel and Santa Maria Basin Areas that are considered "sensitive rocky intertidal habitats". Several questions arise after reviewing this list. First, are there other areas that are equally sensitive that should also be listed? Second, will these and other "sensitive areas", including wetland, estuarine, and subtidal hard-bottom areas be adequately protected from routine OCS operations or oil spills under the preferred alternative? If not, what level of loss would be considered acceptable?

National Marine Sanctuaries

The DEIS describes existing and proposed National Marine Sanctuaries (NMS) under "Areas of Special Concern." A map showing the proximity of lease tracts to NMS should be added to the documents.

Gray's Reef, Gulf of the Farallones, and the Channel Islands NMS are designated World Biosphere Reserves. This highlights the importance of these areas, not only as National treasures but as areas of global significance. Given that these are areas of ecological, scientific, and cultural importance, there needs to be discussion of the environmental impacts of the alternatives specific to these areas.

There should be more analysis regarding impacts of OCS development on NMS, particularly major oil spills and increased vessel traffic. Rigs located within or close to vessel traffic lanes greatly increase the risk of shipping accidents and associated spills entering the sanctuaries. The increased risks should be factored into the cost/benefit analysis. For example, there will be a dramatic increase in the oil rig service vessel traffic in the Santa Barbara Channel and close to the Channel Islands NMS as a result of leasing these new tracts.

Oil spills impacting NMS pose some unique clean-up problems. These difficulties need to be assessed in the impacts and costs/benefit sections.

Spill Impact Assessment

The impact of spills may be underestimated in the program documents. A spill may result in the loss of genetically unique populations or entire species if it occurs in the wrong area. Such a loss would have much greater than local, ephemeral significance. The sea cucumber Cucumaria pseudocurata and the limpet Siphonaria brannani are two examples. A major spill in any one of California's estuaries could result in an unacceptable loss of endangered species or critical habitat. Important populations of fishes that spawn or inhabit estuarine areas, such as the Pacific herring, could be eliminated if a major spill occurred at the wrong time of year.

Potential impacts involving several important sites and biota are not adequately addressed and additional information on harmful impacts to these resources is needed. Specifically, the information provided is not adequate to determine the effectiveness of provisions in Notice to Leasees (NTL) 88-11 on reducing impacts to chemosynthetic communities or the effectiveness of lease stipulations for protecting topographic features and live bottoms. In addition, no data are provided on the frequency with which lease stipulations or NTL-88-11 provisions have been required when OCS activities would potentially impact those communities.

The DEIS does not address methods to minimize impacts to fishery resources and associated wetland and estuarine habitats. In particular, impacts associated with produced water discharges and wetland loss caused by oil spills, pipeline landfalls, maintenance dredging, and channel erosion from vessel traffic should be minimized and unavoidable impacts should be mitigated. No discussion of methods to avoid or reduce these impacts is

provided and no attempt is made to identify measures to fund and implement needed mitigation. We recommend that these issues be addressed fully. Similarly, the DEIS identifies other impacts as being insignificant since they are short-term, localized, or negated by natural environmental factors. In many cases, the information needed to support the significance determinations is not provided.

GENERAL COMMENTS BY REGION

Alaska

Tanker transport of oil from lease areas in the Bering Sea is particularly troubling from a resource standpoint. The DEIS is less clear as to how such a spill would be handled, and what response times or containment efficiencies could be expected. We recommend the final document highlight the transportation aspects of lease sales, and describe what authorities and requirements MMS would have over tanker traffic in and beyond sale areas.

Pacific

An unlikely 100,000 barrel spill for the Pacific Area is discussed on DEIS page IV.H-35. The scenario assumes that it would occur in the summer, in Southern California, approximately 25 miles offshore, under relatively calm sea state conditions. This scenario is only one of many possible scenarios, and it minimizes the potential impacts of a catastrophic spill. For example, if the same spill occurred in the same area during the winter, the mouths of the estuaries would be open, not closed, and thus could be subjected to major oiling. Also, tankers from Alaska OCS operations could cause a spill anywhere along the coast from Alaska to Southern California. An Alaskan OCS tanker could run aground off San Francisco Bay, for example, which could cause a catastrophic spill in a highly sensitive, already degraded estuary.

It is assumed for the cumulative spill effects on DEIS page IV.D-476 that a total of 17 spills will occur in the Pacific Region over the 35-year life of the proposed action, including 5 TAPS tanker spills, 5 import tanker spills, and 7 OCS spills. The OCS totals includes spills from platforms, pipelines, and the tankering of Alaskan OCS oil. The analysis assumes that the spills will occur with uniform frequency and spatial distribution within each planning area over the life of the proposed action. This assumption may not be valid. It is likely that more spills will occur in difficult navigation areas, and that they will occur with random, not uniform, frequency. Many of the difficult navigation areas, such as approaches to major harbors, are also adjacent to the most spill-sensitive species and habitats.

Therefore, it would be more reasonable to assume that spills will more likely occur in sensitive areas, and that spills might overlap in time in a given area.

As a final note, Table IV.D.1.a-6 on DEIS page IV.D-14 shows the assumption that 1 tanker spill would occur in the Northern California Area and 1 tanker spill would occur in the Southern California Area under the preferred OCS alternative. Under Action II, No-Action, or Action III, Slow the Pace of Leasing, it is assumed that no tanker spill would occur in Northern California. Therefore, the sentence on page 15 of the Comprehensive Program Summary and Decision document, which states that "the production of OCS oil reduces the amount of oil imported and thus reduces the spills that would occur from tankers carrying imports in U.S. coastal waters", must be carefully analyzed. While it is true that spills of imported oil would be reduced, it does not follow that the total number of spills would also be reduced, since most OCS oil is also tankered. In the case of Northern California, the MMS analysis concludes that OCS program actually increases the probability of a tanker spill.

Atlantic/Gulf of Mexico

Sections of the DEIS that pertain to the Eastern Gulf of Mexico appear adequate. In this area, we believe that Alternative V, rather than the proposed alternative, would provide greater resource protection since this alternative would provide a 30-mile buffer area for the west Florida coast. Consideration also should be given to expanding the buffer zone to enhance coastal resource protection.

The description of certain South Atlantic and Gulf of Mexico fish communities, fish habitats, and their relation to petroleum development is inadequate. This is especially evident in comparison to the treatment given to other regions such as the Pacific. For example, it appears that the South Atlantic and Gulf of Mexico fish community descriptions rely almost entirely on Struhsaker's important but now dated work. More recent papers are cited in the DEIS but they do not appear to have been used in preparing the document.

There is no discussion of jew fish (Epinephelus itajara) and speckled hind (Epinephelus drummondhayi) which are documented in NMFS reports to the South Atlantic Fishery Management Council as being very rare or uncommon in certain areas. Proposed lease blocks on the Blake Plateau serve as primary spawning and commercial fishing grounds for wreckfish (Polyprion americanus); however, this resource is not mentioned. Furthermore, the document does not mention occurrence or possible impacts to the endangered shortnose sturgeon (Acipenser brevirostrum) or the black sea bass (Centropristis striata). The black sea bass is an abundant species in the South Atlantic and Gulf of Mexico and is of great importance to recreational and commercial fisheries.

The document does not address the dynamics of the Mississippi River plume front in the northern Gulf of Mexico, an area of elevated larval fish abundance and a major sedimentary zone where extensive drilling operations occur. The dynamics of the Gulf Stream frontal zone in the South Atlantic region is mentioned; however, there is little coverage of the transition in ocean provinces in the vicinity of Cape Hatteras, North Carolina. North of Cape Hatteras, shelf water is separated from Gulf Stream water by intermediate slope waters. South of Cape Hatteras, the Gulf Stream impinges immediately on shelf water. This area is significant since many commercially and recreationally exploited fishes are spawned and nurtured in association with local Gulf Stream frontal zones and the area is currently targeted for exploratory drilling.

The Environmental Consequences Chapter states that under a worst case scenario, impacts are not expected to produce measurable economic losses lasting more than one or two seasons. However, no estimated dollar value of these losses or an analysis of the socio-economic impacts that might result from a one or two year disruption of these fisheries is provided.

SPECIFIC COMMENTS

Page I-12: Regarding the Fairweather exclusion, the fact that the current rockfish fishery is small does not mean that future use conflicts are foreclosed. If oil is discovered there and 20-30 years of production results, use conflicts could result as stocks recover and fishing resumes.

Page II-3: The conclusion of no air degradation is flawed with respect to the North Slope OCS oil carried by TAPS to Valdez. There are already air quality problems at the terminal due to production from State lands. Such problems would be expected to continue regardless of the origin of the oil unless emissions controls are successfully implemented at the terminal.

Page II-3, Paragraph 1. This summary of water quality impacts does not follow those identified in the Executive Summary. In particular, impacts of produced water discharges to coastal waters in Louisiana are not mentioned. These impacts should be added to this summary since they are substantial. Impacts to Texas coastal habitats resulting from service vessel discharges, channel deepening, 80 miles of new onshore pipeline construction, chronic pipeline leakage, waste product discharges (drilling fluids, produced water, etc.), and oil spills up to 25,000 bbl are identified; however, there is no discussion of damage prevention, clean-up techniques, or other possible mitigative features that may be employed. These topics should be summarized in this section and discussed in detail in Sections III.A.1.c.(1),(2), and IV.D.1.a.(1).

Page II-10. Impacts to commercially and recreationally important fishes in the Gulf of Mexico that are managed by the Gulf of Mexico Fishery Management Council are not described. Potential impacts to these resources need to be identified.

Page II-10, Paragraph 2. The loss of up to 175 hectares (ha) of wetlands due to erosion from OCS vessel traffic increases and a one growing season dieback of up to 100 ha of wetlands from oil spill contamination along the Louisiana and north Texas coast is significant. Documentation regarding the duration of wetland loss associated with oil spills should be provided. Also, it should be noted that since newly transplanted marshes may support lower densities of some species of living marine resources (LMRs),[1] newly reestablished marshes (following dieoff) may also have different LMR densities than nearby natural marshes. A summary of habitat restoration mitigation measures should be added to the FEIS.

Page II-10, Paragraph 6. The discharge of produced waters in Louisiana coastal waters has been shown to adversely affect fishery organisms and, based on recent studies, may be long-term. Consequently, we disagree with the assertion that reductions in local fish populations would be of short duration. This section should be revised so as to reveal the potential for long-term impacts to local fish populations as affected by the discharge of produced waters.

Page II-11, Paragraph 1. Documentation regarding the four-month to two-year time period for recovery of physical integrity, species diversity, and biological productivity should be provided in the FEIS. Also, a discussion of mitigation involving habitat restoration should be added.

Page III-18, Paragraph 4. Coastal wetland loss data for Texas are provided in a publication by the Texas Parks and Wildlife

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[1] Minello, T. J., R. J. Zimmerman and E. F. Klima. 1987. Creation of fishery habitat in estuaries. pp. 106-120 in Landin, M. C., and Smith, H. K., editors. "Beneficial Uses of Dredged Material; Proceedings of the First Interagency Workshop, 7-9-October 1986, Pensacola, Florida," Technical Report D-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Miss.

Department (1988).[2] These data should be summarized and added to this section.

Page III-18, Paragraph 7. Land loss data for the Chenier Plain are provided in Dunbar et al. (1990)[3]. We recommend these data be summarized along with those for the Mississippi River Deltaic Plain.

Page III-28, Paragraph 2. The DEIS contains numerous references to the live bottom characteristics of Sebree Bank. For example: "Sebree Bank...is a low profile feature..."; "...appears composed of large boulders mostly veneered by fine sediments,"; "Specimens of *Oculina diffusa* have been located,"; and "The bank attracts abundant nektonic species including red snapper ..." In addition, the live bottoms description under Section III.A.2.g.(1), LIVE BOTTOMS: Page III-22, includes the following: "For purposes of the document, live bottoms also include rocky formations with rough, broken, or smooth topography; or areas whose lithotope favors the accumulation of turtles, fishes, and other fauna." Based on these statements it is evident that Sebree Bank should be listed as a live bottom bank and placed under the Live Bottom Stipulation. This Stipulation requires a live bottom survey report by the lessee to the MMS Regional Director to determine whether proposed operations need to be relocated or monitored.

Page III-49, para 3: Shelf circulation is not sluggish. Wind and/or tidal forcing produce vigorous water movements in virtually all Alaska regions. Residual circulation may be weak, however.

Page III-54-55: No discussion of air quality problems at Valdez is provided.

Page III-61 Steller Sea Lion: Preliminary results of the 1991 survey from Kenai to Kiska indicate a continuing downward trend in sea lion counts. The 1991 estimates were down about 5 percent from 1990. Given the current status of this species, Stellar sea lions may become a major concern with respect to the environmental consequences of certain lease sales. The DEIS should state that NOAA has established protective buffer zones around major rookeries in Alaska, and that NMFS is currently developing a proposal to list critical habitat areas for this species. While this process is not completed, we anticipate all of these rookeries and the major haul out sites will be designated. Additionally, important feeding areas along Alaska's coast have been identified. The Steller Sea Lion Recovery Team recommended designating Shelikof Strait, the Bogoslof Island area, and Seguam Pass as critical habitats due to concentrations of forage fish (pollock) which occur there.

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[2] Texas Parks and Wildlife Department. 1988. The Texas Wetlands Plan. Addendum to the 1985 Texas Outdoor Recreation Plan. PWD-PL-4201-450-8/88. 35 pp.

[3] Dunbar, J.B., L.D. Britsch, and E.B. Kemp III. 1990. Land loss rates: Report 2, Louisiana Chenier Plain. Technical Report GL-90-2, Waterways Experiment Station, Corps of Engineers, Vicksburg, MS. 21 pp and appendices.

Page IV.A-4, Paragraph 4. A more detailed discussion is needed regarding the environmental impacts of oil spills from placement of oil pipelines in water depths exceeding 100 meters. More specifically, we are concerned over the potential effects of laying pipelines over geologic faults and scarps that are in close proximity to coral reefs and low-relief banks. The FEIS should note that the transport of oil from less sensitive parts of the OCS into close proximity to coral reefs and low-relief banks would increase spill impacts. The FEIS should identify and MMS should implement means to reduce spill risks in the vicinity of sensitive topographic highs. In this regard, consideration should be given to rerouting pipelines so as to avoid existing biological stipulation zones.

Page IV-A-8: It would be useful to cite average values for the various types of contaminant emissions associated with onshore crude oil storage facilities, gas processing plants, and refineries.

Page IV.A-13, Paragraph 1. The removal of platforms by use of high explosives is destructive to hard bottom and platform piling ecosystems. Additional information on the environmental impacts to sessile and free-swimming marine organisms should be included here since the DEIS states that up to 100 platforms will be removed each year during the five-year program life. See Page IV.A-14, Paragraphs 7 and 8 for reference.

Page IV.D-14: We have not reviewed the supporting studies on oil spill predictions. We are, however, alarmed over the spill probabilities for the Beaufort and Chukchi Planning Areas. The Chukchi area has a projected probability in excess of 99.5 percent for a spill between 1,000 and 10,000 bbl, and of 96 percent for a spill in excess of 10,000 bbl. We believe such risk factors would make these sales unacceptable. It appears these estimates were derived using worldwide data on tanker and platform spills going back to 1964. Thus, these estimates may overestimate the probability of such events occurring today. We hope the many safeguards and controls now placed on these activities would mean the actual spill probabilities today are far less.

Page IV.A-30. Early life stages of many economically important estuarine-dependent fish use coastal canals as migratory pathways to marsh nursery areas. Several species, primarily within the Scienid family, are reported to migrate to and from marsh nursery areas near the bottom of the water column where inshore produced water discharges may be most concentrated. If produced waters are lethal to early life history stages of these organisms, then impacts to NMFS trust resources, when migrating through waterways near discharge points, may be significant. Consequently, we recommend that this section be revised to discuss the potential impacts of produced water discharge to migrating post-larval and juvenile stages of economically important fishery species in Louisiana coastal waters.

Page IV.A-34 (b) Marine Mammals: The Marine Mammal Protection Act and Endangered Species Act were amended in 1986 to allow the incidental taking of depleted, endangered, or threatened marine mammals. NMFS has established procedures for authorizing the non-lethal, unintentional taking (by harassment) of 6 species of marine mammals (including the gray whale) by oil and gas exploration activities in the Chukchi and Beaufort Seas. In contrast to the conclusions of the 1982 Task Force report described in this section, the NMFS believes that exploration activities, particularly seismic surveys, may potentially harass migrating gray whales. The 1982 NMFS report to the California State Lands Commission should be referenced.

Page IV.A-44, Paragraph 6. A discussion of live bottom habitats should be added since these are among the most sensitive habitat types in the South Atlantic Region.

Page IV.D-49-52 The DEIS states: "The effect on endangered and threatened cetaceans from oil spills is expected to be primarily sublethal and last less than one generation with fewer than five deaths. All individual deaths from spilled oil will be replaced through natural recruitment from the next generation." The same statement is reiterated later in the section on nonendangered marine mammals. (Note: there are no threatened marine mammals in the Gulf of Mexico) These statements have little or no scientific basis. There have been no studies to determine the long term effects of oil on cetacean individuals or populations. The studies that have been done indicate that contact with oil can cause a variety of maladies, but these studies have all been rather short term and concerned with the immediate effects.

Page IV.D-63 Steller Sea Lion: How was the projected recovery period from the effects of a spill determined to be three generations? To what levels are these populations returning? We believe such estimates are unrealistic and, at best, understate the risk to these populations, given the precipitous decline in the species and the continuing downward trends indicated by recent surveys.

Pages IV.D.-70, 378, 579. These sections should provide greater detail on the impact of the various alternatives on live bottom habitat in the South Atlantic region.

Page IV.D-74 Northern Fur Seal: The fur seal counts on St. George Island in the Pribilofs continued to decline in 1991. We believe the scenario presented here (a 10,000 bbl spill killing 77,000 fur seals) would not recover in two to three generations, as suggested. In addition to the number of animals killed directly by such a spill, long-term population-level effects could easily be realized through the oiling of rookeries. The 1989 Exxon Valdez spill resulted in many beaches on which oil reappears seasonally, despite initial treatment.

Page IV-D-125, para. 3: The delta discussed in the sentence concerning tankering associated with Navarin Basin production is not identified. Is it the Yukon-Kuskokwim delta?

Pages IV.D-151 through 154. The impacts of produced waters on migrating fishery species has not been adequately discussed. While this section acknowledges lethal and sublethal impacts to these resources when produced water contacts nursery grounds, the issue of impacts to fishery organisms while migrating or being transported through areas affected by produced waters has not been discussed. If a reduction in fishery recruitment into marsh nursery areas upstream from discharge points occurs, fish abundance and harvest could be reduced. In view of this risk, this issue should be addressed in greater detail in this section of the final document.

The DEIS also does not address potential impacts to fishery resources caused by lease-generated wetland loss in coastal Louisiana. The DEIS estimates that at least 300 hectares of coastal wetlands, primarily along the Louisiana and eastern Texas coasts, would be lost due to lease-related activities. An additional "scores of hectares of wetlands" would be lost as a result of Gulf waterway maintenance dredging. Because these wetlands support important fishery resources, their loss would have a long-term adverse impact on fish production. In view of the above, the conclusion that impacts of the proposed action on estuarine-dependent species would be undetectable needs to be addressed.

Pages IV. D.-175-178. The DEIS states: "The effects on marine turtles from oil spills is expected to be primarily sublethal and last less than one generation with fewer than five deaths. All individual deaths affected by spilled oil will be replaced through natural recruitment from the next generation." This conclusion is unsubstantiated. An oil spill in the western Gulf of Mexico, for instance, could foul the beaches at Rancho Nuevo, Mexico during nesting season and cause most of an entire generation of Kemp's ridleys to fail due to egg contact with oil.

The DEIS admits that researchers have noted that sea turtle eggs were rendered infertile upon contact with oil and yet it assumes that no nesting beaches will be impacted. No one can accurately predict the effects of oil spills on the environment or individual species and this should be stated instead of minimizing the effects and essentially dismissing the dangers of spilled oil.

Page IV.D-183, Paragraph 3. The Chenier Plain land-loss data cited previously should be used in place of the sentence stating such data are unavailable.

Page IV.D-185, Paragraph 1. Wetland losses that result from maintenance dredging is described in the DEIS as "scores of hectares." A numerical estimate is needed.

Page IV.D-183 through 186. The adverse impacts of oil spills on wetlands has not been adequately addressed. While this section acknowledges lethal impacts and loss of up to 100 ha of wetlands, the information presented is largely unsupported since the two references used are outdated. This section does not discuss the implications of the Oil Pollution Act of 1990, natural resource damage assessments, habitat restoration, and the National Oil and Hazardous Substances Pollution Contingency Plan. The implications of these factors should be fully addressed. In view of these omissions, the conclusions provided on page IV.D.-186, are not adequately supported and should be reexamined.

Page IV.D-198 through IV.D-199. We are unable to determine from information provided in the DEIS the effectiveness of NTL-88-11 in reducing or eliminating impacts to chemosynthetic communities. Study or monitoring results should be summarized in this section to allow for this determination.

Pages IV.D-200 through IV.D-204. The information contained in the DEIS does not reveal the effectiveness of the topographic features stipulation in reducing or eliminating adverse impacts to topographic features. Study or monitoring results should be provided in this section so that this analysis is possible. In addition, information on the frequency at which this stipulation has been required since 1973, in blocks containing topographic features, should be provided.

Pages IV.D-204 through IV.D-208. We are unable to determine from information provided in this section the effectiveness of the biological features stipulation in reducing or eliminating impacts to live bottoms. Study or monitoring results should be summarized in this section to allow for this analysis. In addition, the frequency at which this stipulation has been required since 1976, in blocks containing live bottoms, should be provided.

The above comments pertaining to the base case scenario also should be addressed under high and cumulative case scenarios and Alternatives III through VI.

Page IV.D.-263, Paragraph 5. The sections on impacts on recreational fishing should address impacts on coastal and oceanic pelagic fish in greater detail. Many of these species are associated with the Gulf Stream frontal zone during one or more stages of their life cycle. Accordingly, the impact of petroleum development in this area could be much greater than in other less unique open-ocean environments.

Page IV.D-263, Paragraph 6. It is generally true that recreational fishing in the South Atlantic occurs within ten miles of shore; however, oceanic pelagic species such as dolphin, wahoo, and billfish that are routinely caught greater than ten miles from shore also comprise an important recreational fishery.

Page IV-D-311: The high case spill effects assessment on shorebirds is flawed because it lacks a consideration of the potential major impacts resulting from a large oil spill contacting key habitats (e.g., Copper River delta) during migration periods. If certain species' opportunities to replenish energy stores during migration were foreclosed due to oiling of intertidal areas, heavy mortalities would be possible.

Page IV-D-348-354: It would be worthwhile to note that the discussions of potential impacts to shorebirds and seabirds in Alaska are included subsequent to the Pacific section of the document. Many readers are likely to miss this material.

Page IV.D-368, Paragraph 1. There appears to be a discrepancy in estimates of produced water discharged into Louisiana coastal waters. This section states about six million bbl per year would be discharged and four billion bbl over 45 years is estimated on page IV.D-293. The base case estimate is 154 million bbl per year. Since the high case estimate made in this section is significantly lower than base case estimates this discrepancy needs to be corrected.

Page IV.D-388, Paragraph 3. Although the number of lease-related service vessel trips for the high case scenario is twice that of the base case, the land loss estimates associated with widening of the channels remains the same. We believe that the high case land loss estimate also would increase significantly and this potential impact should be identified and addressed.

Page IV-D-391: The assumption here and elsewhere that Beaufort Sea causeways will be no longer than 2500 ft seems tenuous given the prevalence of very shallow water far offshore along much of the Beaufort Sea coastal region.

Page IV-D-392, para. 5: It is unclear what the range of volumes of the 67 larger spills is: 51-1000 bbl?

Page IV.D-504 Conclusion: We do not believe that sea lion populations should be expected to recover from any of the impacts analyzed in this section. Given the current state of the species and the continuing downward trend, it is not certain the species could recover in 30 years, let alone in the face of these additional factors. What support exists for the statement that overall cumulative impact to the sea lion population is expected to require six generations or more for recovery over the 30-year period of this proposal?

Page IV.D-581, Paragraph 2. We disagree with the statement that over fishing is the "most serious impact producing factor" in the South Atlantic Region. The degradation and loss of essential nursery, forage, and cover habitat is probably more significant than over fishing, especially with regard to long-term impacts.

Page IV.D-635 (b) Alaska Region: This section should also present a discussion on recreational fishing. Recreational fishing is locally significant and provides an important economic base to several coastal communities. Additionally, recreational clamming beaches in Cook Inlet are very heavily utilized and could be lost through individual or cumulative oil and fuel spills.

Page IV.D-Page 644, Paragraph 5. We disagree with the statement that the "greatest impact on commercial (and recreational) fisheries comes from the fishery industry itself." In the South Atlantic region the loss and degradation of essential habitat is generally recognized as the most serious long term threat to these resources.

Page IV. H-42. This section addresses the impact of a gas well blowout as an example of an unlikely accidental impact on the Atlantic Region's marine environment. Based on this scenario, we assume that natural gas may be the target resource for the South Atlantic Region (Manteo Exploratory Unit). The impacts of this type of accident are substantially less than the oil spill related event assessed for other regions. In view of the fact that the marine biota of the South Atlantic Region is rated second highest in terms of its sensitivity (Table 17, page 78 of the Decision Document, Comprehensive Program 1992-1997), we believe that an oil spill should be evaluated as the worse case of an unlikely accidental event in the South Atlantic Region.

DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service

Centers for Disease Control
Atlanta GA 30333

October 16, 1991

Director
Minerals Management Service
(OCS Comprehensive Program)
1849 C Street, N.W.
Washington, D.C. 20240-7000

Dear Sir:

We have completed our review of the Draft Environmental Impact Statement (DEIS) for the proposed Comprehensive Program, 1992 - 1997, for Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management. Technical assistance for this review was provided by the Emergency Response Group and Special Programs Group, National Center for Environmental Health and Injury Control, Centers for Disease Control. We are responding on behalf of the U.S. Public Health Service.

The document addresses the National Contingency Plan requirements that responders adhere to the Occupational Health and Safety regulations in the event that a release occurs. However, Appendix D is silent on this issue. Such an environmental incident could pose an imminent and substantial danger to the public's health and welfare and require a prompt response by emergency personnel. Although the draft document does not describe in detail a health and safety program, one should be developed and followed. While a complete response plan is not an appropriate part of the EIS, other documents should be incorporated by reference, if they exist, or a need to develop contingency plans should be identified during the EIS process and a commitment should be made to implementing adequate plans before proceeding with steps which would actually increase the risk. A comprehensive worker health and safety program should address: 1) Safe work practices, 2) Medical surveillance, 3) Environmental and personnel monitoring, 4) Personnel protection equipment, 5) Education and training, and 6) Standard operating safety procedures.

In addition, community resources will often respond to an environmental incident, and the public may be in the impact area initially. This document does not identify procedures that would address community concerns regarding exposure information. All contingency plans for the area should contain the names, addresses and telephone numbers of those able to provide assistance in addressing the needs of the local population.

Potential impacts on subsistence are identified for Alaska regions, but mitigation plans are not mentioned. For the base case, the conclusion stated on page IV.D-266 is:

> ... One or more important subsistence resources are expected to become unavailable, undesirable for use, or available only in greatly reduced numbers for one or more periods of 1 to 2 years during the life of the proposed leases in the Arctic. ...

The conclusion for the high case, stated on page IV.D-433, is:

> ... The occurrence of assumed oil spills in the Arctic suggest that one or more important subsistence resource would become unavailable, undesirable for use, or available only in greatly reduced numbers for one or more periods of 1 to 2 years during the life of the proposed leases in the Arctic. ...

The conclusion for the cumulative case, stated on page IV.D-648, is:

> ... The resulting effects on subsistence would constitute the reduced availability, accessibility, or desirability for use of important subsistence resources for 1 or 2 years. ...

The section on mitigation does not address these matters.

Thank you for the opportunity to review and comment on this document. Please ensure that we are included on your mailing list to receive a copy of the Final EIS, and future EIS's which may indicate potential public health impact and are developed under the National Environmental Policy Act (NEPA).

Sincerely yours,

Kenneth W. Holt

Kenneth W. Holt, M.S.E.H.
Special Programs Group (F29)
National Center for Environmental
Health and Injury Control

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

TAKE PRIDE IN AMERICA

ADDRESS ONLY THE DIRECTOR
FISH AND WILDLIFE SERVICE

In Reply Refer To:
FWS/DHC/BFA

NOV 5 1991

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Memorandum

To: Director, Minerals Management Service

From: Director

Subject: Second Draft of the Proposed Program for Proposed Outer Continental Shelf (OCS) Natural Gas & Oil Resource Management Comprehensive Program and the Draft Environmental Impact Statement (DEIS) (EC 91/93)

The Fish and Wildlife Service (Service) has reviewed the proposed Minerals Management Service (MMS) Comprehensive Program and the DEIS and offers the following comments for your consideration.

VALUATION OF PROGRAM ALTERNATIVES

Program Alternative 6 of Estimating Net Economic Value for Program Alternatives recommends exclusion of sensitive bathymetric features. We recognize that existing biological stipulations protect these areas, with reasonable assurance, from oil and gas development. We are not as convinced that these features are as well protected from hydrocarbon transport, especially oil. We recommend that the EIS for subsequent leases in the Bathymetric Feature Exclusion Areas include a comprehensive description of the pipeline configuration in the area, future pipelines, and special stipulations to ensure they are protected from faults and failures.

PACIFIC OCS REGION

The proposed program identifies environmental studies to be completed in all four planning areas of the Pacific OCS Region (Southern California, Central California, Northern California, and Washington-Oregon) during the 1992-1997 period. The Service is especially interested in studies identified by the MMS which would provide important information on the status and distribution of marine mammals and seabirds in the Southern California Area. As you are aware, seabirds are among the most affected resources from accidental oil spills. The proposed studies would provide information critical to the Service's evaluation of future OCS lease sales, as well as existing OCS operations in southern California. We would appreciate being kept apprised of the status of these studies.

Leasing in the Pacific OCS Region has been deferred until January 1, 1996, after which leasing in the Southern California Area is proposed. We recommend MMS consider further deferring the tracts in that Planning Area north of the Santa Maria River to assist the recovery of the threatened southern sea otter. The results of prior MMS studies on the effects of oil on otters, and the success of cleaning and rehabilitation techniques for oiled otters evidenced during the Exxon Valdez oil spill, demonstrate that large oil spills can have both acute and chronic effects on otters. Also, the Service's review of oil spill risk analyses and spill trajectories for past proposed lease sales has shown that OCS tracts north of the Santa Maria River (i.e., north of Platform Julius) present a significant risk to otters.

The draft revision of the Sea Otter Recovery Plan identifies the need to expand the current range of the otter. The draft Recovery Plan proposes that recovery can be achieved when 5,400 animals are secure between Point Conception and the Oregon-California border. This scenario is estimated to be achieved in 22 years. Thus, we will continue to have concerns for leasing in pertinent Planning Areas beyond the 1997 time period covered by the present proposal.

ALASKA OCS REGION

The MMS proposes to consider leasing in the following Planning Areas during 1992-1997: Gulf of Alaska - Yakutat; Cook Inlet; either Norton Basin, Navarin Basin, or St. Matthew Hall; either Hope or St. George Basins; Beaufort Sea; and Chukchi Sea. In addition, studies are planned for the following Planning Areas where no leases are proposed: Gulf of Alaska - Middleton, Kodiak, Shumagin, and North Aleutian Basin.

The section on "Proposed Future Directions" (III.C.2.d.) discusses future environmental studies, but is directed primarily at the arctic Planning Areas. The Service recommends that the discussion be expanded to include a description and identification of environmental studies planned for those areas that will not have proposed sales. The Service supports the studies effort for all the Planning Areas, and looks forward to collaborating with MMS in developing appropriate environmental studies to address information needs.

The Service offers the following comments on the proposed sales for the individual Planning Areas in the Alaska OCS Region.

Gulf of Alaska - Yakutat

Many species of migratory birds including waterfowl, shorebirds, and raptors migrate along the coast of Southeast Alaska. At certain times of the year (March-June and August-November), potential impacts to these species from oil spills and disturbance from exploration/production activities could be particularly severe. The most important areas are the mouths of rivers and streams, bays, estuaries, and islands. The Yakutat forelands is of utmost importance to migrating water birds during spring and fall migration periods. Other major areas of concern include the Kaliakh River (nesting bald eagles); seabird nesting colonies along the shore from Cape Suckling to Dry Bay, especially at Icy and Yakutat Bays; sea otters in Yakutat and Icy Bay (sea otters numbers are low east of Cape Suckling, but may increase as otters from high density areas, such as Orca Inlet expand and repopulate); and the Peales peregrine falcon known and potential nesting areas at Yakutat and Icy Bays. In addition, the marbled murrelet is a pelagic seabird that has been proposed for listing as a threatened species under the Endangered Species Act in the Pacific Northwest, but not in Alaska. Its offshore feeding behavior could expose the species to adverse effects of oil exploration and production. Its status in southeast Alaska is currently being studied by the Service.

Before continuing the proposed sale for the Yakutat area, MMS should evaluate impacts on fish and wildlife resources and the high risks to the sport, commercial, and tourism industries which depend on the abundant natural resources of the Gulf of Alaska. If MMS decides to continue the sale proposal, the Service recommends adoption of a coastal buffer, not as outlined in the Comprehensive Program, but an expanded buffer as proposed as an alternative in the proposed 1988 Gulf of Alaska Sale 114. This buffer was identified as Alternative IV - Wildlife Buffer Deferral in the MMS scoping report for the proposed sale, and provided 15-mile buffer zones around major wildlife concentration areas.

Norton Basin, Navarin Basin, or St. Matthew-Hall

The Service believes a sale in Navarin Basin would result in less environmental impact than a sale in either Norton Basin or St. Matthew-Hall. Navarin Basin generally has lower overall values for walrus, polar bear, peregrine falcon, wintering waterfowl, and nesting seabirds than either of the two alternative sale areas. In addition, oil spills in the Navarin Basin are probably less likely than spills from the other two areas to contact the Yukon-Kuskokwim Delta, an extremely important nesting area for waterfowl, shorebirds, and sandhill cranes.

Hope Basin or St. George Basin

The Service recommends leasing the Hope Basin instead of the St. George Basin. The St. George Basin supports a greater abundance and diversity of fish and seabirds than does the Hope Basin. With respect to marine mammals, however, both basins have high values. The Hope Basin is on the migration route of walruses, belugas, spotted seals, and endangered bowhead whales. It is an important feeding area for the endangered gray whale. This area also provides important habitat for polar bears when ice is present. St. George Basin supports Steller sea lions (recently listed as threatened), harbor seals (declining), northern fur seals (depleted), sea otters, and numerous cetacean species.

Although the seabird abundance and diversity is greater in the St. George Basin, the largest seabird nesting colonies in the Chukchi Sea occur at Cape Thompson, which is adjacent to the Hope Basin lease area. Approximately 360,000 murres and 26,000 black-legged kittiwakes nest at Cape Thompson (Hatch et al., 1990). The primary feeding area for these breeding birds extends approximately 50 miles offshore.

The Chukchi Polynya forms southeast of Point Hope when the prevailing easterly winds, which usually occur in March and April, separate the pack ice along the flaw zone. This polynya often provides the only open water habitat in early spring before any major deterioration of the pack ice occurs. Migrating marine mammals and birds concentrate along this lead system in the spring and follow it as it progresses northward. Virtually the entire Alaska and northwestern Canada population of king eiders (more than one million birds), as well as thousands of common eiders and oldsquaws, migrate along these ring leads.

To protect the Chukchi Polynya and the seabird feeding areas from oil spills and noise disturbance, we recommend a coastal buffer for the Hope Basin lease sale area.

Transportation assumptions discussed for the Hope Basin are that oil will be transported by submerged pipeline to an onshore facility, where tankers will transport it through Bering Strait to southern destinations. We are strongly opposed to tanker traffic through the Bering Straits because of the challenging ice and weather conditions of the Chukchi Sea and Bering Straits. The Bering and Chukchi seas provide critical habitat for endangered bowhead and gray whales, Pacific walruses, and numerous other migratory marine mammals and birds.

Beaufort Sea

The Service recommends Option 3, which maintains the current boundaries of the planning area and allows for a coastal buffer adjacent to Barrow.

This coastal buffer is the northern extension of the Point Lay Deferral, which we recommended in our comments on the DEIS for Sale 126. This buffer is important for the protection of biologically sensitive coastal areas, subsistence resources, and for the migration corridor created by the spring lead system.

Chukchi Sea

The Service recommends Option 3B. This option considers leasing the same area as Sale 109, except for the coastal buffer, which was known as the Point Lay Deferral in Sale 126.

Most arctic species depend upon a migratory lifestyle. Bowhead, gray, and beluga whales, walruses, spotted and bearded seals, and marine birds pass through the Bering Strait and into or through the Chukchi Sea twice annually during spring and fall migrations. The critical nature of the Chukchi migratory corridor for many marine species warrants a conservative approach, at least until we know more about the vulnerability of wildlife species during migration.

Option 3B is the best compromise for allowing exploration while protecting biologically sensitive coastal areas, the spring migration corridor created by the lead system, and subsistence resources. The Chukchi coastal ecosystem has been little studied and many questions remain as to the importance of the lease area to fish and wildlife. This option would afford some protection to the coastal ecosystem during the exploration phase. However, long-term research and adequate biological resource data are needed for environmentally responsible decisions on how to produce and transport any commercially recoverable oil.

DEIS - ALASKA REGION

Affected Environment (III.B.-66), Arctic and American Peregrine Falcons

The first two sentences should be updated to read: "Based on 1991 surveys, the population of arctic peregrine falcons now stands at approximately 160 pairs, which produce about 220 young per year. The population of American peregrine falcons in Alaska is estimated at about 225 pairs, while in California 125 pairs are estimated (Ambrose, pers. comm., 1991)." The last sentence in this paragraph should read, "In 1978, six years after the United States restricted the use of...."

In the second paragraph the fourth and fifth sentences should read, "Peregrine falcon nest sites closest to the coast occur on shoreline cliffs from Norton Sound north to Cape Lisburne. On the North Slope, nesting sites nearest the coast occur about 20 miles inland (Ambrose, pers. comm., 1991)." In the third paragraph, the second sentence should read, "Egg laying occurs about the first week of May in interior Alaska ...."

Due to the increase in the population of arctic peregrine falcons, a status review is currently being conducted, which may lead to a reclassification proposal for peregrines.

Affected Environment (III.B.-68), Diving Ducks

The most recent estimate is 8,000 spectacled eiders breeding in Alaska (Cochrane, USFWS, pers. comm., 1991). Kertell (1991) estimates 70,000 to 80,000 Steller's eiders winter in Alaskan waters. Based on aerial survey data, about 2,000 Steller's eider are believed to breed in Alaska.

This section should be modified to include a discussion on the current review of these species for proposed listing. On December 10, 1990, the Service received a petition to list the spectacled and Steller's eiders as threatened or endangered under the Endangered Species Act of 1973, as amended. The Service found that the petitioned action may be warranted (56 FR 19073, April 25, 1991), and is currently performing a formal status

review of these species. This should be completed in December 1991 and the Service will then render a decision on any listing proposal.

Affected Environment (III.B.-71), Paragraph 4

The dusky Canada goose, not the Tule goose, nests on the Copper River Delta.

Base Case (IV.D.-111), High Case (IV.D.-343) and Cumulative Case (IV.D.-539

The section on Impacts on Marine and Coastal Birds for the Alaska Region does not include discussions of seabirds or shorebirds. However, the Pacific Region Marine and Coastal Bird section includes Alaskan seabirds and shorebirds. We recommend the discussions be separated as they are for all other impact discussions. If there is a compelling reason to combine these sections under the Pacific region, there should be a note to the reader under the appropriate heading as to where to find this discussion.

Base Case (IV.D.-121), Paragraph 2 and Conclusion

The generation time for the bald eagle is longer than four years as indicated in the first paragraph. The time period, six to eight years, as indicated in the Conclusion section is more appropriate. However, the Conclusion section also states that recovery would require a minimum of three generations. This should be a minimum of 18 years rather than 12 years, as stated.

Base, High, and Cumulative Cases (IV.D.), Diving Ducks

These sections should be revised to state that the molting and wintering areas for the spectacled eider are unknown, but are suspected to be in the open water areas of the Bering Sea. Consequently, an oil spill in this case could impact a molting or wintering area of the species and could have major impacts on a substantial portion of the species population. The spectacled and Steller's eiders present a rather unique case, since both appear to be declining in numbers. Any significant impacts to the species may exacerbate current factors causing the species decline and result in losses that take many years for recovery, if recovery occurs at all.

Appendix F

In order to be useful to reviewers, the Analysis of Options section needs to discuss the impacts of each particular option independently. Discussions of areas not leased complicates the analysis. For example, the Hope Basin and St. Matthew-Hall option under (9) Pinnipeds, contains the sentence:

> Potential oil spill impacts eliminated by deletion of the St. George and Navarin Basins would include those ranging up to three

generations for recovery to its former status in the case of the fur seal population and one or more generations for recovery of the harbor seal population.

Also, the use of a matrix table would be helpful in demonstrating the differences in impacts when comparing Planning Areas. Also in Appendix F, (9) Pinnipeds, this section does not include Steller sea lions. The reader does not know this until after reading about the impacts to polar bears and sea otters. Although it is unclear why sea lions are not included under pinnipeds, they should at least follow as (10) instead of (12).

Please direct any comments or questions to Assistant Director, Ralph Morgenweck (Attn: Don Peterson) at (703) 358-2183.

Richard N. Smith

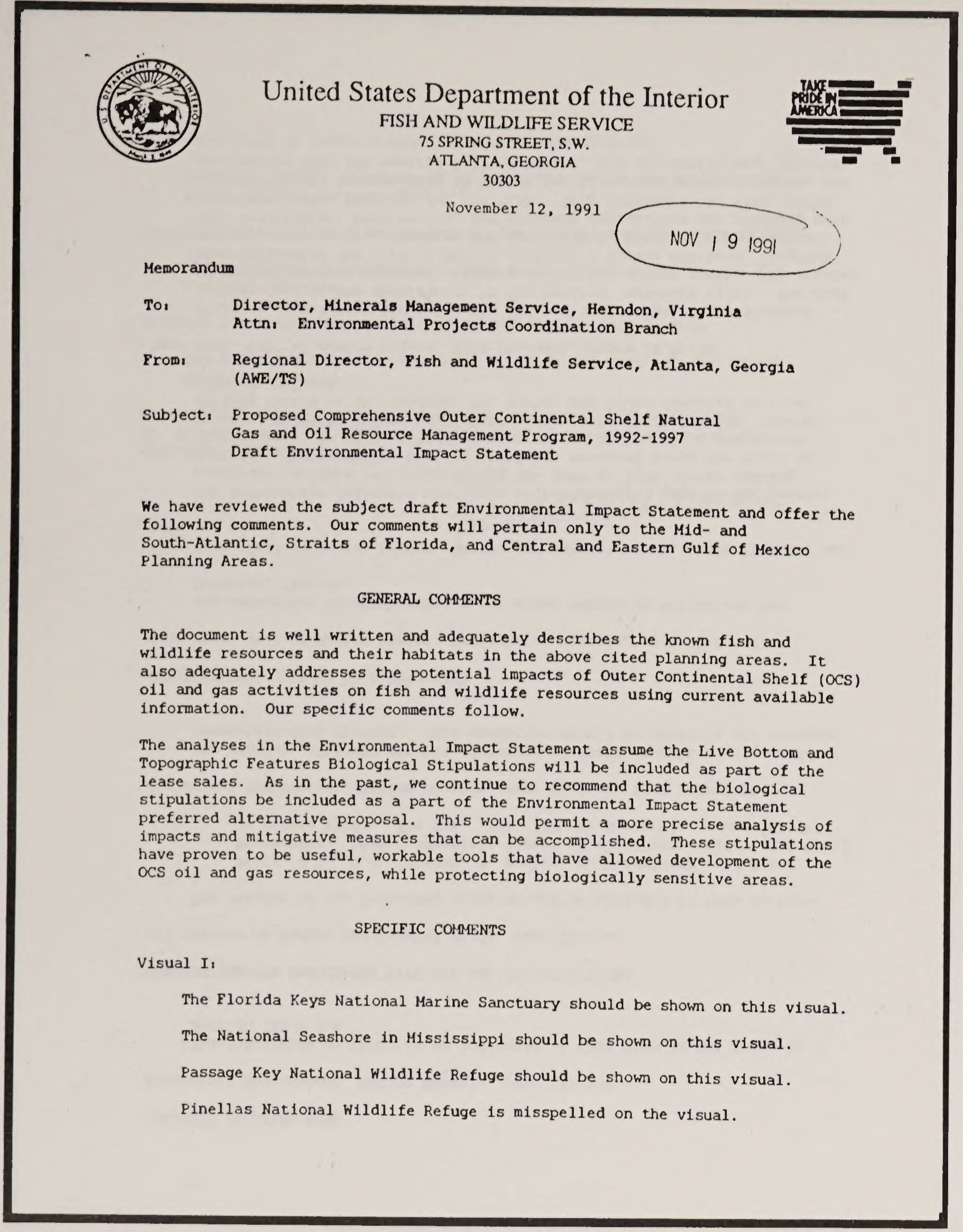
Literature Cited

Ambrose, Skip, U.S. Fish and Wildlife Service, Fairbanks, AK.

Cochrane, Jean, U.S. Fish and Wildlife Service, Anchorage, AK.

Hatch, S.A., J.F. Piatt, B.S. Fadely, and B.D. Roberts. 1990. Monitoring St. Lawrence Island and Cape Thompson seabird populations. Pages 105-111 in: Minerals Management Service, Alaska OCS Region, Third Information Transfer Meeting. Jan. 30-Feb. 1, 1990. Anchorage, AK.

Kertell, K. 1991. Disappearance of the Steller's eider from the Yukon-Kuskokwim delta, Alaska. Arctic (In press).



United States Department of the Interior
FISH AND WILDLIFE SERVICE
75 SPRING STREET, S.W.
ATLANTA, GEORGIA
30303

November 12, 1991

NOV 19 1991

Memorandum

To: Director, Minerals Management Service, Herndon, Virginia
Attn: Environmental Projects Coordination Branch

From: Regional Director, Fish and Wildlife Service, Atlanta, Georgia (AWE/TS)

Subject: Proposed Comprehensive Outer Continental Shelf Natural Gas and Oil Resource Management Program, 1992-1997 Draft Environmental Impact Statement

We have reviewed the subject draft Environmental Impact Statement and offer the following comments. Our comments will pertain only to the Mid- and South-Atlantic, Straits of Florida, and Central and Eastern Gulf of Mexico Planning Areas.

GENERAL COMMENTS

The document is well written and adequately describes the known fish and wildlife resources and their habitats in the above cited planning areas. It also adequately addresses the potential impacts of Outer Continental Shelf (OCS) oil and gas activities on fish and wildlife resources using current available information. Our specific comments follow.

The analyses in the Environmental Impact Statement assume the Live Bottom and Topographic Features Biological Stipulations will be included as part of the lease sales. As in the past, we continue to recommend that the biological stipulations be included as a part of the Environmental Impact Statement preferred alternative proposal. This would permit a more precise analysis of impacts and mitigative measures that can be accomplished. These stipulations have proven to be useful, workable tools that have allowed development of the OCS oil and gas resources, while protecting biologically sensitive areas.

SPECIFIC COMMENTS

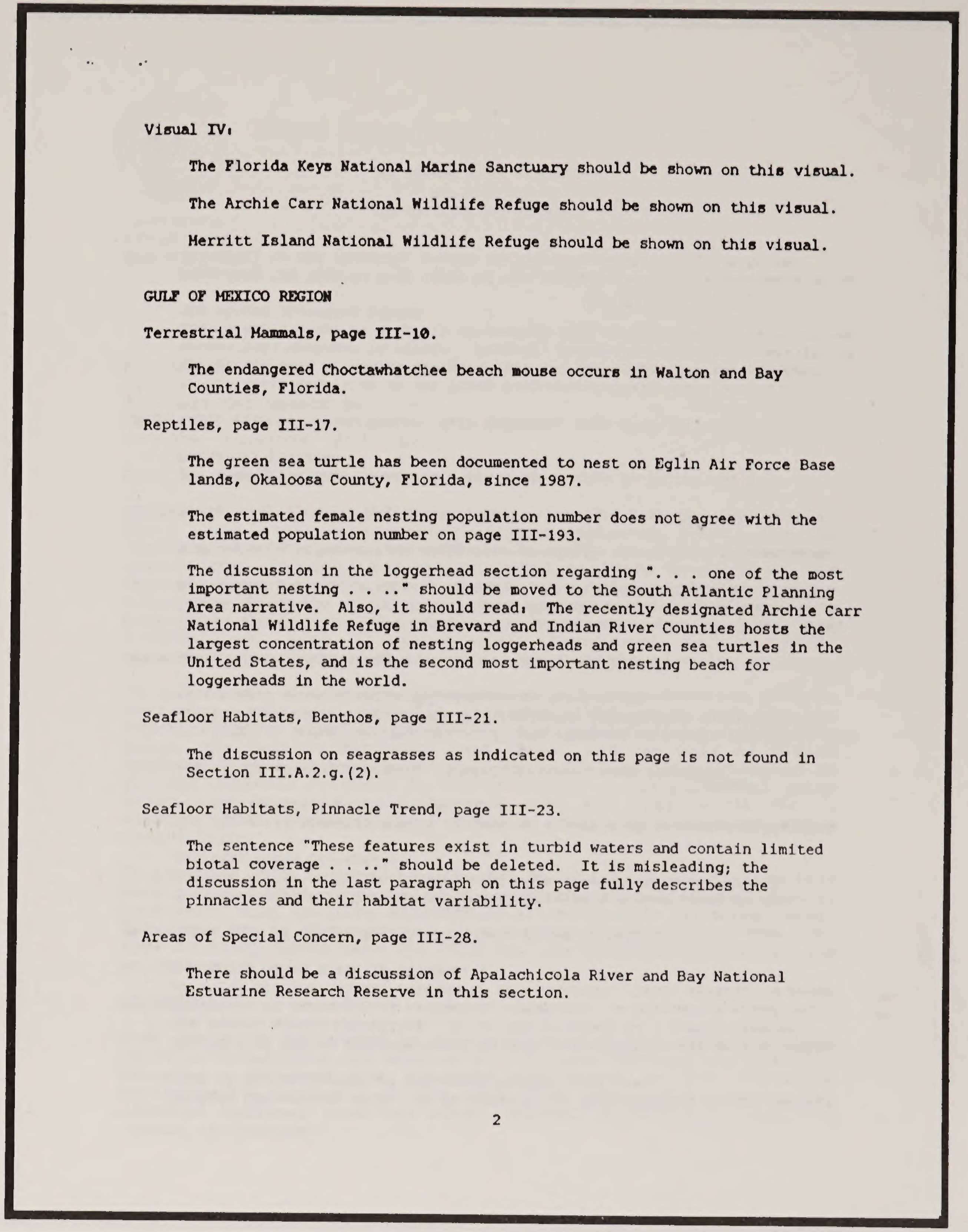
Visual I:

The Florida Keys National Marine Sanctuary should be shown on this visual.

The National Seashore in Mississippi should be shown on this visual.

Passage Key National Wildlife Refuge should be shown on this visual.

Pinellas National Wildlife Refuge is misspelled on the visual.



Visual IV:

The Florida Keys National Marine Sanctuary should be shown on this visual.

The Archie Carr National Wildlife Refuge should be shown on this visual.

Merritt Island National Wildlife Refuge should be shown on this visual.

GULF OF MEXICO REGION

Terrestrial Mammals, page III-10.

The endangered Choctawhatchee beach mouse occurs in Walton and Bay Counties, Florida.

Reptiles, page III-17.

The green sea turtle has been documented to nest on Eglin Air Force Base lands, Okaloosa County, Florida, since 1987.

The estimated female nesting population number does not agree with the estimated population number on page III-193.

The discussion in the loggerhead section regarding ". . . one of the most important nesting . . . ." should be moved to the South Atlantic Planning Area narrative. Also, it should read: The recently designated Archie Carr National Wildlife Refuge in Brevard and Indian River Counties hosts the largest concentration of nesting loggerheads and green sea turtles in the United States, and is the second most important nesting beach for loggerheads in the world.

Seafloor Habitats, Benthos, page III-21.

The discussion on seagrasses as indicated on this page is not found in Section III.A.2.g.(2).

Seafloor Habitats, Pinnacle Trend, page III-23.

The sentence "These features exist in turbid waters and contain limited biotal coverage . . . ." should be deleted. It is misleading; the discussion in the last paragraph on this page fully describes the pinnacles and their habitat variability.

Areas of Special Concern, page III-28.

There should be a discussion of Apalachicola River and Bay National Estuarine Research Reserve in this section.

ATLANTIC PLANNING AREA

Biological Environment, Marine Mammals, page III-181.

The discussion on manatees as indicated on this page is not found in Section III.D.2.a.

GENERIC IMPACTS ASSOCIATED WITH OIL AND GAS ACTIVITIES

Oil Impacts on Marine and Coastal Birds, page IV.A-47.

The results of the following study should be included in this section:

Piatt, J.F., C.J. Lensink, W. Butler, M. Kendziorek, and D.R. Nysewander. 1990. Immediate Impact of the 'Exxon Valdez' Oil Spill on Marine Birds. The Auk. Vol. 107, No.2, April. pages 387-397.

Biological Environment, Marine Mammals, page IV.A-11, last paragraph.

The manatee, although capable of bursts of speed, cannot easily avoid encounters with vessels. This exception should be noted in the document.

ENVIRONMENTAL IMPACTS OF ALTERNATIVE

Base case, Gulf of Mexico Region, Terrestrial Mammals, page IV.D-108.

The endangered Choctawhatchee beach mouse occurs in Walton and Bay Counties, Florida.

Base case, Gulf of Mexico Region, Marine and Coastal Birds, pages IV.D-111 and 114.

Our information indicates that bald eagles actively nest in the coastal Louisiana parishes (45 nests during the 1989 to 1990 winter nesting period). Historically, nesting (two) has occurred along the coast in Mississippi. In 1990, a hacking program was initiated at Bon Secour National Wildlife Refuge in Alabama. In northwestern Florida, coastal nesting occurs at St. Vincent, St. Marks, and Lower Suwannee National Wildlife Refuges.

Base case, Gulf of Mexico Region, Gulf Sturgeon, pages IV.D-150.

Existing information indicates the limited home range of the sturgeon applies only to the specificity to the species' spawning river. The Gulf of Mexico sturgeon migrates offshore during the winter months. No studies have delineated the Gulf of Mexico sturgeon's marine habitats. Limited stomach analyses from Suwannee and Apalachicola River sturgeon indicate that sand bottom, hard bottom, and seagrass communities are probably very important marine habitats for the fish. This inference, if true, could explain why the eastern Gulf of Mexico has historically had larger populations than the central Gulf of Mexico, and why their range does not include the western gulf. It is thought the fish migrates to the eastern Gulf of Mexico because of the sandy benthic habitats.

The Gulf of Mexico sturgeon would be most vulnerable to oil spills during the winter marine migrations. Since the sturgeon is a benthic feeder, ingestion of contaminated sediments, organisms, or vegetation could occur once the spilled oil has settled to the seafloor. Their ability to sense and avoid oiled areas is unknown.

Base case, Gulf of Mexico Region, Reptiles, pages IV.D-177.

The results of the Minerals Management Service's funded Study of the Effects of Oil on Marine Turtles could not conclude that sea turtles actively avoid oil spills.

The oil spill scenario should include an analysis of seasonal spills when sea turtles are nesting on beaches.

Base case, Gulf of Mexico Region, Coastal Habitats, page IV.D-184.

It should be noted that the oil spill stipulations have only applied to the Florida panhandle. The oil spill stipulation should also be included in all coastal related oil spill narratives for Florida.

Base case, Gulf of Mexico Region, Live Bottoms, page IV.D-206.

This narrative should include the Minerals Management Service funded study Impact Assessment of Exploratory Wells Offshore South Florida which documented mechanical impacts to the benthic habitats at the drill site.

A discussion of impacts on seagrasses should be included in this section.

High case, Gulf of Mexico Region, Terrestrial Mammals, page IV.D-342.

The endangered Choctawhatchee beach mouse occurs in Walton and Bay Counties, Florida.

High case, Gulf of Mexico Region, Gulf Sturgeon, page IV.D-366.

An oil spill generated in the Outer Continental Shelf would not directly impact the Gulf of Mexico sturgeon eggs and larvae because the sturgeon spawns well upstream in rivers. However, reduced reproductive viability of adults could occur as a result of contact with an offshore oil spill during the winter migration period.

Regarding the limited home range of the sturgeon and active avoidance of an oil spill by the sturgeon, please see above comments on pg. IV.D-150.

High case, Gulf of Mexico Region, Reptiles, page IV.D-383.

Regarding active avoidance of an oil spill by the sea turtles, please see above comments on page IV.D-177.

Cumulative case, Gulf of Mexico Region, Terrestrial Mammals, page IV.D-531.

The endangered Choctawhatchee beach mouse occurs in Walton and Bay Counties, Florida.

Unlikely Accidental Events, Gulf of Mexico Region, page IV.H-6.

The Alabama and Perdido Key beach mouse do not occur in the impact area in Texas.

We appreciate the opportunity to provide comments. Please contact Dr. James Brown of my staff at FTS 841-6343 if you have any questions regarding this matter.

James W. Pulliam

United States Department of the Interior

NATIONAL PARK SERVICE
P.O. BOX 37127
WASHINGTON, D.C. 20013-7127

IN REPLY REFER TO:
L7617(774)
DES-91/0020

NOV 21 1991

Mr. Scott Sewell
Director
Minerals Management Service
381 Elden Street, MS 4320
Herndon, Virginia 22070-4817

Dear Mr. Sewell:

The National Park Service (NPS) has reviewed the Outer Continental Shelf (OCS) draft environmental impact statement (DEIS) for the Comprehensive Program 1992-1997. In order to fully understand assumptions, impacts, and environmental analyses we reviewed the Federal Register Notice of August 1, 1991, and the volume containing Decision Documents. Our comments necessarily involve both the DEIS and the Decision Documents since they are interrelated, even though Minerals Management Service (MMS) apparently treats them as separate tracks in the planning process.

We appreciate the complex processes an OCS comprehensive program requires. With encouragement from MMS staff, there are now NPS representatives working with the Pacific Regional Technical Working Group, the Pacific Northwest Task Force, and the Gulf of Mexico Regional Technical Working Group. Since 1987 we have attempted to provide comments relative to NPS interests on all potential lease sales, and have met several times with MMS representatives to discuss NPS programmatic concerns for this comprehensive undertaking.

In addition, NPS responded to the Notice of Intent for the new five year program DEIS, and provided a comprehensive list of national park areas that could be affected in all of the OCS planning areas. Our comments on the proposed comprehensive program for the OCS, 1992 to 1997, based upon the DEIS and the Decision Documents, are as follows:

GENERAL

Over the past few years we have appreciated the efforts of MMS staff to understand and address our concerns through the planning process. We note the expanded discussion in the "Affected Environment" section of the DEIS that identifies potentially affected national park and other national conservation areas as "areas of concern".

We think that the inclusion of national parks, as well as other areas of national significance, is very important if resources at risk are to be fully understood and an appropriate balance between leasing and environmental values is to be achieved as required by Section 18(a)(3) of the OCS Lands Act.

In our response to the original Notice of Intent, we indicated that we thought national parks and other national conservation units warranted a separate description in the "Affected Environment," as well as separate analyses in the environmental consequences section. We also requested that the general location of national park areas be shown on maps, even if simply indicated by a point location.

Nevertheless, we find that few environmental consequences have been identified or analyzed relative to national park areas, and the location of units of the national park system are not indicated on any map. In those places where an impact is discussed, it is dismissed as insignificant because it is deemed by MMS to be relatively short-term in duration.

We recognize that in a programmatic evaluation of such large geographic scale it is only possible to deal with broad categories of impact. However, because of the national significance, the number of units and the range of values encompassed by national parks, as well as the high degree of protection they are afforded under Federal law, we are very concerned that NPS areas receive consideration and protection throughout all of the subsequent processes involved in lease sales and plans of operations. The programmatic DEIS and the Decision Documents should underscore an intent to do so.

We think that it is important for the programmatic DEIS to incorporate protective measures and special considerations as mitigation measures from the outset of the planning process so they are automatically part of the program in all phases. Protective measures could include environmental studies projects on natural and cultural resources targeted for national park areas and done in cooperation with the NPS, special stipulations, as we have previously suggested for sales in Alaska, withdrawals and deferrals, as well as additional cooperation in oil spill prevention and area contingency planning. Moreover, oil spill predictive modelling could be made sensitive to national park concerns by the inclusion of NPS units as targets in the land segments being modelled.

ENVIRONMENTAL SENSITIVITY

New analyses in the proposed program included estimating "the relative environmental sensitivity of the various planning areas." Environmental sensitivity and the attendant methodology do not seem to be discussed in the DEIS, but can be found in the Decision Documents as Appendix 10.

Environmental sensitivity analysis is supposed to help determine the timing and location of potential natural gas and oil lease offerings. Upon review of Appendix 10, we note that units of the national park system are not specifically considered in the analyses. While coastal habitats are considered in general, there are no weighting factors or any other mechanisms to acknowledge national significance or parameters of Federal laws that provide special levels of designation and protection, as with the national parks. Additionally, cultural resources are not considered, and although air quality sensitivity was a factor, the sensitivity of Class I air quality areas was not factored into the analysis. Nevertheless, Section 4202 of the Oil Pollution Action of 1990 (OPA 90) will required area contingency plans that identify, describe, and protect environmentally sensitive areas and areas of environmental importance. Both the Decision Documents and the DEIS should acknowledge the provisions of OPA 90. National parks and similar areas of national significance are clearly environmentally important areas.

We cannot tell if the additional information would make a significant difference in the comparative sensitivities of whole planning areas. Nevertheless, we do think that a similar approach, weighted as we suggest, needs to be applied within specific areas proposed for leasing to configure the area in response to environmental concerns, to ensure a meaningful design of to the buffer areas as contemplated in one of the alternatives, and to ensure the inclusion of adequate mitigation throughout the program. This approach would also provide a framework for some of the requirements in OPA 90 for area contingency plans. The NPS supports the inclusion of buffers into the proposed action in principle, but only if they are designed in response to specific environmental concerns and features, such as national parks.

COST/BENEFIT ANALYSES

Another important element in the balancing of environmental and other factors is explained on page 80 of the Decision Documents volume. The MMS interprets the "proper balance" provision of Section 18 (a)(3) to include some notion of cost/benefit analysis. Nevertheless, on page 88 of the Decision Documents, it is noted that non-use values are difficult to address in economic terms, and need to be supplemented by environmental impact statement (EIS) analyses. Such analyses specifically identified as a qualitative analysis of damages to non-use values does not appear in the DEIS.

We reviewed Appendices 7 and 8 of the Decision Documents, where the cost/benefit methodologies are more fully discussed. Environmental costs are explained beginning on page 8-1. The costs included are costs of potential additional regulations, substitution costs, and social costs, which also incorporate incremental efforts to ensure safe operations and protect environmental values.

Environmental impacts of oil spills are included, but the estimates do not seem to encompass the full range of costs for oil spill control and clean-up, especially in environmentally sensitive areas such as national parks and wilderness areas. Under its own variation on natural resource damage assessment, MMS has not assessed the loss of non-use values, which would also incorporate cultural resources values.

On page 8-64, under a description of spill-related wildlife and ecological losses, damage is defined as a loss of resource value plus replacement cost. As stated on page 8-62, a fur seal is valued as the commercial value of its pelt only. Full recovery is assumed to be complete after two years. Non-use values were not measured because if full recovery is assumed to occur after two years, MMS considers it unlikely that option or existence values would be lost since they are considered to be measured by long-term use opportunity.

It is clear that the approach taken in the economic evaluation does not account for the wider potential loss of values recognized for national parks and similar areas and the resources they encompass. To not estimate the damages associated with the loss of these values does not seem to recognize Interior's full scope of trusteeship. Additionally, we question the assumption that non-use values are not measurably lost in a two-year period of time.

In the absence of an accounting for potential impacts and injury from the proposed action to non-use values (e.g. national park values) in either the DEIS or the Decision Documents, as well as their absence in the cost/benefit analyses, we suggest that an appropriate level of analyses of impacts and potential damages for non-use values be included in the final environmental impact statement (FEIS). The scope of non-use values should also include cultural resources.

CULTURAL RESOURCES

In addition to national park cultural and natural resources, we are also concerned about sites not within national park areas that may be on or eligible for inclusion on the National Register of Historic Places, as well as areas purchased with Land and Water Conservation Fund monies. Under the National Historic Preservation Act, the National Environmental Policy Act, the Archaeological and Historic Preservation Act, the OCS Lands Act, and the Abandoned Shipwreck Act, MMS has significant cultural resource management responsibilities on the OCS and adjacent lands.

Many areas that have potential for significant archaeological resources are identified during lease-block geohazard field surveys, but are usually avoided by the industry rather than specifically evaluated.

In 1990 MMS managed 1,444 million acres, and only two percent of these lands were adequately inventoried for cultural resources. There are more than 8,000 known shipwrecks on the continental shelf. About 35 percent are assumed to occur in federal waters, but only 261 have actually been located. Four prehistoric sites have also been located.

The DEIS should specify that archaeological resources and historic properties are important elements that need to be addressed by the environmental studies program. This would be particularly useful in Alaska, where comprehensive predictive modelling of offshore cultural resources has not yet been undertaken. Presently, there is little actual cultural resource inventory data for OCS lands, since the program is oriented toward lessee identification, evaluation and avoidance of resources identified after leasing.

AREA-SPECIFIC COMMENTS

Gulf of Mexico

A portion of Gulf Islands National Seashore is adjacent to Mobile Bay. The base case for the proposed action in the DEIS (IV.D-187) indicates that a new pipeline would come ashore at Mobile. As we indicated in our comments on Lease Sale 139 on June 13, 1990, the Mississippi portion of Gulf Islands National Seashore includes the most pristine, intact coastal barrier islands in the nation.

The federally owned portions of Horn and Petit Bois Islands were designated as wilderness under the Wilderness Act, and the privately owned portions were identified as potential wilderness. The park boundary is approximately 1 mile offshore from the islands.

The discussion of impacts indicates short-term effects on the park units from a small spill, but does not discuss what those may be. The analysis then projects that there would be no impacts to barrier beaches from pipeline crossings, yet the potential for impacts is discussed on page IV.D-196. No attempt is made to define long-term versus short-term impacts.

The cumulative increase in drilling activity and the transport of oil from platforms to shore-based processing facilities increases the risk for an oil spill reaching an NPS unit, especially because of the proximity of Gulf Islands to Mobile Bay, a major destination along the Gulf coast. Additionally, the cumulative impacts of chronic releases of oil and other toxic substances related to OCS activities are not addressed. Moreover, vessel trips in support of OCS activities are expected to substantially increase. Helicopters and service vessel support should not impact national park airspace or waters. Given the projected 45 year life of the proposed action (IV D.620) we think that potential impacts to NPS units need to be given greater analytical attention and appropriate mitigating measures applied.

PACIFIC REGION

The area proposed for leasing in southern California is immediately to the north of Channel Islands National Park. The park is only very briefly referenced in the "Affected Environment" for that region. The information in the DEIS is insufficient to identify potential impacts on national park values.

Channel Islands National Park was changed from national monument to national park by Congress in 1980 to "protect the nationally significant natural, scenic, wildlife, marine, ecological, archaeological, cultural, and scientific values of the Channel Islands." The park encompasses five of the eight Channel Islands-Anacapa, Santa Cruz, Santa Rosa, San Miguel, and Santa Barbara- and the surrounding waters to one nautical mile.

The most biologically productive and recreationally significant areas of the park are the shorelines, intertidal and nearshore marine habitats that include major kelp forests. Six species of pinnipeds live and breed within the park, more than in any other place in the world. Eleven species of seabirds nest in the park, and the southern California Seabird Survey, funded by MMS, has underscored the importance of islands as remnant breeding habitat for seabirds in southern California. The park also contains habitat that could be necessary for recovery of diminished Southern Sea Otter populations.

In order to understand the full ramifications of additional leasing in the waters north of the park, we think it is very important to carefully examine the cumulative impacts of increased drilling, pipelines, tanker traffic, air pollution, water pollution, and risk exposure. In addition to the additional risk to endangered and threatened species, such as the Gray whale, Black Storm Petrel, Ashy Storm Petrel, California Brown Pelican, and other individual species. We need to know the overall risk to the viability of park resources.

The recent oil spill from the American Trader showed that there is a need for additional oil spill cleanup vessel support in the area. As mitigation, we would like to see a discussion on this subject that identifies the support needs for cleanup in light of additional leasing, and how the needed level of support would be attained.

We are also concerned about the overlapping of ship traffic lanes and lease tracts in the Santa Barbara Channel. At present there is a high degree of risk of collision between a ship and a platform. The proposed lease plan appears to significantly increase that risk. The U.S. Coast Guard is currently studying the feasibility of establishing a tanker-free zone in the Santa Barbara Channel. This study was mandated by P.L. 101-380, and is expected to be completed in late 1992. The relationship between leasing and this study should be addressed.

We also note the findings of the National Research Council in the 1989 report The Adequacy of Environmental Information for Outer Continental Shelf Oil and Gas Decision: Florida and California, in which some of the information for the Southern California Planning Area was found to be insufficient. A specific plan to address the information gaps should be completed prior to any decisions regarding specific sales.

The DEIS should address the status of lease sales 73 and 80 relative to the new program, especially regarding the potential for updating any stipulations that may have been placed on them.

ALASKA REGION

The major issues of NPS concern for the Alaska Region are similar to those for other areas with the inclusion of potential impacts on subsistence use. A great concern for this area is the higher degree of risk to natural and cultural resources from oil spills because of the vagaries of weather, and the remote, isolated wilderness coastlines that are somewhat complex in configuration. Prevailing weather conditions in Lower Cook Inlet and Shelikof Strait make it one of the most difficult areas in the world in which to conduct any kind of operation.

The DEIS should address the realities of oil spill clean-up under such circumstances. For instance, the shoreline of Katmai National Park and Katmai Preserve precludes the establishment of base camps. Coupled with difficult weather conditions, cleanup for Katmai would be difficult.

It should also be noted that Katmai National Park and Preserve encompasses all islands within five miles of the coast. All the islands are designated wilderness. Because federal leasing begins three miles offshore, it is possible that exploration and production facilities could be located adjacent to these areas of Katmai. The resources of Katmai National Park and Preserve could easily be exposed to continuing disturbance. This is a good example of an area of high environmental sensitivity where there should be maximum reduction of risk.

As illustrated by the Exxon Valdez incident, an oil spill originating in one portion of a planning area can have widespread effects over a broad area in Alaska. The Alaska Coastal Current sweeps from east to west. A large spill in the Yakutat proposed area could potentially impact designated wilderness and important wetland areas in Glacier Bay National Park and Preserve, and eventually find its way into Prince William Sound, as well as to the Kenai Peninsula and beyond. The full range of impacts from the Valdez spill are not fully understood, are still being defined and damage is still being assessed. For instance, the ramifications of the spill on bald eagle populations are still being monitored. We think that leasing decisions relative to Yakutat and Cook Inlet should be made pursuant to the completion of appropriate studies.

We note that neither Wrangell-St. Elias National Park and Preserve, a portion of which is adjacent to the proposed Yakutat area, or Lake Clark National Park and Preserve, adjacent to Cook Inlet are addressed in the DEIS. Wrangell-St. Elias was established in 1980 under the Alaska National Interest Lands Conservation Act (ANILCA). Likewise, Lake Clark National Park and Preserve was also established in 1980. The coastal area of the park has important marsh and other areas, such as Tuxedni Bay, that are important nesting areas for migratory waterfowl, and anadromous fishes, such as Red Salmon, enter its waters to spawn in Lake Clark itself.

Alaskan tidal marshes are highly productive and vulnerable to spill events. Presently, the "best available technologies" are inadequate for complete clean-up and restoration. A major wetland damaged within national park boundaries is not truly replaceable, nor can another site substitute for the significant derogation of park values from a toxic spill.

The Norton Basin, Hope Basin and Chukchi Sea proposed lease areas have a moderate to very high potential for adverse impacts on Bering Land Bridge National Preserve and Cape Krusenstern National Monument.

Bering Land Bridge has an extensive barrier beach system, second only to that of Padre Island within the national park system. The Preserve encompasses about one third of the Seward Peninsula. Significant coastal resources within the boundary also include extensive lagoons, and the largest haulout area in the Hope Basin at Cape Espenbeerg, designation has been recommended by the NPS. The nature of such areas is to serve as a focal point for marine debris, already occurring from commercial fishing and increased shipping. The potential for marine debris from OCS activities should be addressed.

The Spectacled Eider (Somateria fischeri) and the Stellar's Eider (Polysticta stelleri) are under consideration by the U.S. Fish and Wildlife Service for protection under the Endangered Species Act. Both species occur within Bering Land Bridge. Additionally, the only seabird colony within a unit of the national park system in western Alaska is in Kotzbue Sound (Sullivan Bluffs). A very large waterfowl nesting area, the Nugnugluktuk Estuary, is also in Kotzbue Sound. The colonies could be impacted by an oil spill.

Although the DEIS states that no permanent or long-term changes in populations or distributions of marine mammals and birds are anticipated under the proposed action, there does not seem to be an acknowledgement that many populations are already depressed, such as sea otter and bald eagle, due to the Exxon Valdez oil spill, or are already declining, such as the recently listed populations of Stellar sea lion. The analyses of cumulative effects need to take this factor into account.

The scenario for an unlikely accidental event for Alaska is described for August near the Pribilof Islands. If the same spill were assumed to occur about 30 miles north of Bering Strait in late September or October, the northerly and northeasterly winds would drive the spill ashore on both sides of the Strait. Cetaceans and seabirds could be severely impacted because of staging and migratory patterns during that time of the year. Oil would probably come ashore at Cape Krusenstern, Bering Land Bridge, and in across the Strait into Russia. We think that this scenario needs to be revised to reflect some of other potential impacts with seasonal variation in event occurrence

Cape Krusenstern was established in 1978 in part to protect habitat for seals and other marine mammals, as well as for other resources. Twenty-one species of mammals are known along its coast.

A major portion of known archaeological resources in western Alaska are on or near the coast. For instance, archaeological sites are found along a succession of 114 beach ridges in Cape Krusenstern. They encompass Eskimo communities of every known cultural period in Alaska. Increased wave activity from increased shipping, oil spills, and construction of support facilities could adversely affect these important resources.

The proposed Comprehensive Program does not address NPS cultural resource concerns as they have been expressed in review comments on lease sales in Alaska since 1987. The Operations Training Program should include training in Section 106 of the National Historic Preservation Act, and the provisions of the Archaeological Resource Protection Act training for program administrators and employees. The NPS would be willing to assist in such training.

The archaeological resources analyses for Alaska states that only one archaeological site will be impacted under the high case scenario. We question this conclusion, along with one that states that most archaeological sites can be protected from oil spills as illustrated by the Exxon Valdez spill (IV. D 274).

The overall cumulative case concludes that impact on archaeological resources are few, and those areas that would potentially be disturbed or lost could be replaced by similar onshore resources (IV.D 657). NPS cultural resource data leads to a conclusion that is contradictory to that of MMS. For instance, the Alaska coastal zone within the lease sale areas contains a number of historic and prehistoric sites of unique and significant character, including several National Historic Landmarks. To our knowledge, information lost from these sites is not replaceable because similar resources are unknown and may not exist.

We appreciate this opportunity to comment on this large and understandably complex undertaking. The National Park Service is willing to meet with you to discuss these comments and to try to reach resolution on some of the difficult issues while ensuring maximum protection for units of the national park system and other nationally significant resources within our jurisdiction. For more information and to discuss a potential meeting, please call Kheryn Klubnikin, Environmental Quality Division, at (202) 208-5126.

Sincerely,

Denis P. Galvin
Associate Director
Planning and Development

cc:
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF ENFORCEMENT

NOV 1 [illegible]

Mr. S. Scott Sewell
Director
Minerals Management Service
Department of the Interior
Washington, D.C. 20240

Dear Mr. Sewell:

The Environmental Protection Agency (EPA), in accordance with its responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, has reviewed the programmatic draft environmental impact statement (PDEIS) for the proposed Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Comprehensive Program for 1992 to 1997 prepared by the Minerals Management Service (MMS).

This proposed program is less ambitious than past programs which offered sales in greater numbers, higher frequency and made greater acreage available for lease. This PDEIS shows improvement over the environmental impact statement (EIS) for the last 5-Year Plan, 1987 to 1992. For example, the PDEIS discussions on various topics are more detailed and include consistent treatment of environmental consequences among the four OCS regions (Gulf of Mexico, Alaska, Pacific and Atlantic). We believe the current program represents an improvement over past operations. Notable improvements include:

- increased efforts to gather environmental information,
- increased opportunities for participation in the decision-making process and cooperation and coordination among affected parties,
- a new Area Evaluation and Decision Process (AEDP) that includes decision points to proceed, delay, or stop the process, and
- completion of studies to support future leasing decisions.

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However, EPA still remains concerned about several aspects of this program. These concerns are summarized below and discussed in greater detail in the enclosures.

Environmental Stipulations: As EPA has indicated in past comments on site-specific NEPA documents to MMS, we are concerned that the protective stipulations described in these EISs have not been adopted. EPA is aware that the MMS decision to adopt and tailor particular stipulations is made on a sale-by-sale basis at the time of decision on the Final Notice of Sale and not in the EIS. Historically, this has resulted in MMS receiving an adverse project environmental rating (i.e., "Environmental Objections" or "EO") when a lesser rating (i.e., "Environmental Concerns" or "EC") could have been received if lease sale stipulations had been incorporated into the project description.

EPA advises against unrestricted leasing without inclusion of protective environmental stipulations. For example, most environmentally sensitive habitats could be protected either through deletion (deferral) of those sensitive areas from the sales or through the use of protective stipulations. As we have suggested in our review of previous site-specific OCS lease sales, committing to the protective measures as a part of the proposed action would be a positive move in the direction of assuring environmental protection and decreasing controversial environmental issues early in the sale process.

Preferred Alternatives: EPA believes that three of the alternatives: Alternative III (Slow the Pace of Leasing (for the Alaska OCS Region only)), Alternative V (Establish Coastal Buffers) and Alternative VI (Exclude Designated Bathymetric Features) should be incorporated into the final program. Inclusion of Alternative III for the Alaskan OCS region would result in a 75% reduction in arctic wetland contamination (PII-15), reduced impacts to the bowhead whale population and less frequent impacts on subsistence resources and the beluga whale population. Inclusion of Alternative V will also result in a reduction of impacts on the bowhead and beluga whale populations. Inclusion of Alternative VI will reduce or eliminate impacts on submarine canyon communities in the Atlantic and designated bathymetric features in the Gulf of Mexico.

Air Quality: EPA continues to have generic problems with the air quality information presented by MMS. Some of these problems include the lack of: (1) quantitative information on emissions during peak years, average years and low years; (2) information regarding where emissions will be occurring and, particularly, how close they will be to the shore; (3) information regarding the time span of emissions at any of the emission points; and (4) information regarding the trend in air pollutant emissions, particularly throughout the Central and Western Gulf of Mexico planning basins.

Despite this assessment of these problems with air pollutant emissions, coordination between MMS and EPA has dramatically improved over the last two years. Both agencies understand the other's goals and responsibilities much better than before and we believe that such coordination will enhance our abilities to quantify emission levels and mitigate air quality impacts from OCS sources in the future.

Cumulative Impacts: The PDEIS states that the most significant impact associated with the proposed action is the potential for oil spills and their effects on marine biota and marine habitat. We agree that the effects from spilled oil could be significant and that spills are likely to have a relatively low probability of happening. However, the combined effects from routine impact-producing activities in conjunction with activities not directly related to oil and gas activities could also have significant adverse cumulative effects on biota and habitat. The final EIS for this five-year program should present the methodology that was used by MMS to evaluate additive and synergistic effects.

Consequently, EPA is concerned about MMS not (1) including environmental stipulations for OCS unleased tracts, (2) adopting certain additional environmentally protective alternatives, (3) describing OCS emissions that affect onshore air quality, and (4) describing its cumulative impact methodology. Therefore, we have rated Alternative I (The Proposed Action) as "EC" (Environmental Concerns), and the information presented in PDEIS as "2" (Insufficient Information). See enclosed summary of EPA's rating system.

Thank you for the opportunity to review the PDEIS for the proposed OCS Natural Gas and Oil Resource Management Comprehensive Program for 1992 to 1997. If you have any questions regarding our comments, please feel free to contact me or have your staff call Craig Hooks of my staff (260-5906).

Sincerely,

Richard E. Sanderson
Director
Office of Federal Activities

Enclosures

SUMMARY OF THE EPA RATING SYSTEM
FOR DRAFT ENVIRONMENTAL IMPACT STATEMENTS:
DEFINITIONS AND FOLLOW-UP ACTION *

Environmental Impact of the Action

LO--Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA intends to work with the lead agency to reduce these impacts.

EO--Environmental Objections

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1--Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment

February, 1987

GENERAL COMMENTS ON THE MINERALS MANAGEMENT SERVICE OUTER CONTINENTAL SHELF NATURAL GAS AND OIL COMPREHENSIVE PROGRAM 1992-1997 DRAFT ENVIRONMENTAL IMPACT STATEMENT

ENVIRONMENTAL CONSEQUENCES

EPA has concerns that the references appearing throughout the documents regarding estimates of recovery of natural resources from potential spills may not be adequately substantiated. In particular, projections regarding species recovery should reflect any new information which may be available from the Exxon Valdez oil spill. We note that the decision document references a sensitivity analysis, which will be prepared for inclusion into the Proposed Final Program, that will include a range of potential damages for infrequent, very large oil spills. MMS states that it will solicit public comments on this analysis during review of the final program; however, it appears that there will be no time for the incorporation of that review into the programmatic final EIS (PFEIS). We recommend that this sensitivity analysis be made available to the public for comment to allow any comments or changes to be incorporated into the Proposed Final Program and PFEIS.

THREATENED SPECIES

It is our understanding that Steller sea lion populations are experiencing a continuing downward trend and that the National Marine Fisheries Service (NMFS) has established protective buffers around major rookeries. The NMFS is in the process of designating critical habitat that includes existing rookeries and major haul out areas for this species. Important foraging areas along the Alaska coast have also been identified. Given the current status of this species, the Steller sea lion could become a significant issue with respect to environmental consequences of certain proposed lease sales. The programmatic final environmental impact statement (PFEIS) should update the sea lion discussions to include these new developments on proposed lease sales.

OIL SPILLS

Appendix D of the PDEIS provides a good discussion of the capability of industry and government to respond to oil spills in Arctic waters and in broken ice conditions. However, tanker transport of oil from lease sales in the Bering Sea is not well defined in terms of how a spill would be handled and what response times and containment efficiencies are expected. The PFEIS should clarify the oil transportation aspects of these sales and describe the requirements MMS would have for tanker traffic in and beyond the Bering Sea areas.

CUMULATIVE EFFECTS

The PDEIS states that the most significant impact associated with the proposed action is the potential for oil spills and their effects on marine biota and marine habitat. However, the combined effects from a number of routine impact-producing activities that are sure to occur (e.g., rig placement and removal, discharges and emissions, noise and disturbance) in conjunction with activities not directly related to oil and gas activities could also have significant adverse effects on biota and habitat.

The cumulative effects analysis presented in the PDEIS depends on the analysis contained in the supplemental final EIS Five-Year OCS Oil and Gas Leasing Program Mid-1987 to Mid-1992, that dealt with the cumulative effects of OCS activities on migratory species that migrate through multiple planning areas in the Alaska and Pacific regions. In our comments on the supplemental final EIS, EPA stated that the EIS did not fully address additive or synergistic responses to exposure of populations to multiple activities/effect-producing factors. The PFEIS for this five-year program should present the analytical approach that was used by MMS to evaluate additive and synergistic effects.

PREFERRED ALTERNATIVE

The proposed action has fewer lease sales in fewer planning areas and fewer tracts/acres are being considered for leasing in each planning area. EPA believes that this represents a significant improvement over past five-year plans. However, we have concerns with the proposal as it relates to lease sales in the Alaska OCS regions.

First, throughout the discussion of environmental consequences, Alaska resources are highlighted as the ones to be most affected compared to the other three OCS regions. The draft EIS concludes that Alaska lease sale areas will experience most of the adverse effects to marine mammals, coastal and offshore areas used by marine and coastal birds, coastal fish (particularly migratory species), wetland and estuarine habitats, and cultural and subsistence activities of native communities. One of the criteria in Section 18 of the OCS Lands Act states that size, timing and location of oil and gas activities among oil-and-gas-bearing physiographic regions of the OCS shall be based on consideration of "an equitable sharing of developmental benefits and environmental risks among the various regions." Based on the evaluation of the proposal in the PDEIS the Alaska lease sale areas appear to be subjected to a disproportionately large number of potential adverse effects when compared to other OCS regions.

Second, alternatives have been developed that could lessen some of the adverse effects on Alaska resources and result in a more balanced (equitable sharing) program for the next five years. Alternative III (Slow Leasing Pace) and Alternative V (Establish Coastal Buffers) could be implemented for the Alaska lease sales with a minimal effect on net social value. (The Comprehensive Program document reaches this conclusion on p. 45.) Alternative III would entail one lease sale in the Beaufort Sea and Chukchi Sea planning areas instead of the two lease sales in these planning basins in the proposed action. Alternative III, applied to the Alaska OCS region, would reduce the estimated number of oil spills in the Arctic, lessen the frequency of impacts to subsistence resources, and decrease wetland contamination by 75% (PII-15). Alternative V would establish coastal buffers near Yakutat in the Gulf of Alaska, the Barrow area in the Beaufort Sea, and the Pt. Hope area in the Chukchi Sea. These coastal buffers would benefit bowhead and beluga whales, and reduce oil spill effects on wetland-estuarine habitats in the Chukchi Sea. EPA supports coastal buffers option C-1 over C-2. Option C-1, extending the buffer to the edge of the Stamukhi zone, would provide greater protection to the lead system that is an important migratory pathway for a number of migratory species.

In the Gulf of Mexico and Atlantic OCS regions, stipulations have been required to provide protection to a variety of bathymetric features and submarine canyons, respectively. Alternative VI would exclude designated bathymetric features in the Central and Western Gulf of Mexico and Atlantic Regions by excluding the germane blocks considered for lease. We support adoption of this alternative.

AREA EVALUATION AND DECISION PROCESS (AEDP)

Many of the provisions/components/steps that are described in the detailed discussion of the AEDP are not new. For example, past five-year programs have included Regional Technical Working Groups (RTWG), Information Transfer Meetings, use of the Environmental Studies Program to gather data, Call for Information, Notice of Intent to Prepare an EIS, scoping meetings, and Request for Information and Comments, to name a few.

EPA Region 10 has been involved in two past lease sales where the provisions of the AEDP were tested. Our initial involvement was as a member of the coordination team for the OCS Mining Program in Norton Sound. We were given a chance to review and comment in writing on every aspect of the lease sale process in addition to preliminary and official versions of documents. The coordination team was also invited to attend two workshops, one on mercury in the environment and one on designing monitoring plans. Both topics were significant issues in the lease sale evaluation process. The Norton Sound process allowed early and extensive involvement of affected parties, numerous opportunities for consultation and coordination, discussion on the adequacy of available information, and consideration and fine-tuning of the area to be considered for leasing.

Our second opportunity to participate in an advance version of the AEDP was the Pacific Northwest Task Force for the Washington/Oregon lease sale. The strengths of this process were the efforts to gather information on the lease sale area from numerous sources, identify significant data gaps and propose the kinds of studies needed to fill these gaps.

The successes and strengths of the Norton Sound and the Washington/Oregon lease sale efforts were due to the use of the new and innovative techniques (task force/coordination teams and extensive information gathering efforts) rather than dependence on the standard steps and provisions. These "coordination teams" also will be able to assist in the difficult task of addressing the adequacy of information and decision-making criteria used for OCS decisions.

A great deal of discretion is given to the regional MMS offices to determine what additional steps or activities (task forces, coordination teams, special topic workshops, etc.) will be used in individual lease sales. Please indicate if the AEDP includes requirements to use some of the new components. The Norton Sound and Washington/Oregon lease sale efforts were initiated at the request of the Governors of the affected states. Please indicate if a Governor's solicitation will become a necessary requirement for use of the newer and more innovative components of the AEDP.

Additionally, earlier coordination of affected parties will enable MMS to appropriately gauge whether sufficient industry interest exists to continue or even start the lease sale process. The Navarin Sale 107 went as far as the Proposed Notice of Sale before the sale was delayed/canceled.

DETAILED COMMENTS ON THE MINERALS MANAGEMENT SERVICE OUTER CONTINENTAL SHELF NATURAL GAS AND OIL COMPREHENSIVE PROGRAM 1992-1997 DRAFT ENVIRONMENTAL IMPACT STATEMENT

NEPA

PII-30: The Summary of Comparison of Impacts section should also summarize positive impacts associated with each of the alternatives.

PIV.D-475: The relationships (functional or environmental) between the proposal and the proposed LA/LB 2020 project should be clarified. Please indicate whether one will cause, contribute to or exacerbate environmental degradation because of the other's existence. Also, effects on the proposed Port Disney project should be discussed, especially in terms of aesthetics.

PE-1: The "Assumed Mitigating Measures" -- One of EPA's environmental objections to proposed lease sales is the impact of leasing on biologically sensitive offshore habitats. EPA objects to proposed unrestricted leasing without inclusion of protective environmental stipulations, based on the site-specific NEPA analysis.

ALTERNATIVES

General: It would be advisable to title the alternatives identically across documents and sections. The Executive Summary, for example, and the Purpose and Need section use different titles for the same alternative.

Pvii: With a slower leasing pace alternative, the conclusion is drawn that "fewer economic benefits would be realized by the U.S." This may be true in the short-term, if one equates greater energy production with more economic benefits. However, resource depletion impacts upon price should also be included in this discussion as a long-term negative impact.

Also on this page, under the Leasing in Fewer Planning Areas discussion, the document makes the point that "incremental economic benefits would go to those who provide the imported oil" necessary to meet our energy requirements. It should be made clear that this is a short-term economic benefit and only a benefit if we forego use of enhanced conservation/alternative energy sources.

PI-1: This section identifies the "project's" need as "to help reduce the Nation's dependence on oil imports". If this is the basis for leasing, the document should also address what is being done to enhance on-shore production of oil and gas from wells that are partially shut down due to current oil pricing.

PI-5: We agree that conservation should be evaluated as an alternative, at a minimum, in combination with a reduced leasing strategy.

PII-13: We note that on this page, and throughout the document, MMS uses the term "foregone resources" in discussing the no action alternative. We believe that it is more appropriate to describe oil and gas resources in this context as being conserved. Foregone connotes finality, as in depleted, whereas conserved identifies the resource as remaining available for future development.

PIV.D-669: The ICF report indicates, the "largest use of oil is in transportation and as a fuel [gas] in stationary applications, and that, "...Both oil and gas are also used as a raw material in industry, but this is a minor use." We would therefore suggest that MMS clarify the conclusion concerning the negative impacts of conservation within the framework of this particular "end-use". We suggest that conservation would impact the use of oil as a fuel in transportation and stationary applications rather than as a raw material which provides end-products.

LEASING
PI-13: Regarding lease stipulations, the MMS should clarify whether or not the assumptions mentioned in this PDEIS will be placed on the lease as stipulations prior to leasing. For example, on PIV.D-90 the EIS suggests that only air and water guns will be used in seismic surveys. Please clarify if this will become a stipulation in the lease. We recommend that all such assumptions stated in the PFEIS be discussed in more detail in each lease-specific EIS and, to the extent possible, be specified as stipulations placed on the lease prior to sale. This would minimize the speculative aspects of the EIS and assist in ensuring that the potential lessee is aware of specific constraints prior to purchasing the lease.

WASTE MATERIALS/SPILL
General: We recommend that the PFEIS clarify whether the forecasted rates reflect a static, increasing, or decreasing level of oil consumption in the U.S. We are also interested in knowing if the forecast considers enhanced conservation, which could decrease consumption, and therefore reduce spill rates.

PIV.A-1: The discussion suggests that drill muds and cuttings may be retained on-site and then barged for onshore disposal. The PFEIS should expand the discussion to identify when this barging occurs, what triggers its occurrence, and the locations where the materials are disposed.

PIV.D-450: Reference Table IV.D.1.c-5. Given the 87% and 48% spill probabilities shown cumulatively for Southern California, EPA assumes at least one spill (and perhaps more) will occur; however, the probability of the range of multiple spills can not be determined because the data are presented as "1 or more." Please clarify what the probability is for 2 or more spills. Please identify the current spill probabilities before factoring in the proposed action.

PIV.D-649: It is unclear if the tanker spill projections factor in overall traffic increases which are projected to result from the proposed expansion of Los Angeles/Long Beach Harbors (LA/LB 2020). The PFEIS should reflect spill probabilities, given the combination of projected reductions in oil tanker traffic (from implementation of the proposed action) and projected increases in shipping traffic resulting from expansion of the LA/LB Harbors.

FISH & WILDLIFE
PIV.D-166: The EIS should quantitatively define "measurable reductions" as used in "...are expected to cause measurable reductions in the abundance of the whiting subpopulations off California..."

PIV.D-179: The document discusses use of procedures to mitigate impacts to sea turtles and assumes such "procedures would be in place in the Pacific Region for the proposed action". We would like assurance that all "assumptions" used in the EIS would actually be a functional part of the lease. Lease stipulations are a means of such assurance. We recommend the PFEIS discuss the MMS process of assigning lease stipulations for all programmatic based assumptions such as that described.

PIV.D-255: The EIS should quantitatively define "a few fish" as in "effluents and discharges are expected to kill a few fish..."

AIR QUALITY
PII-3: It is clear under the new Clean Air Act (CAA) that, at a minimum, emissions offsets would be required if the proposed action were implemented. We suggest that language such as "...are likely to result in a requirement...," be changed to reflect the new changes in the CAA. We also suggest that potential categories of offsets and control equipment likely to be required to ensure compliance with the CAA be identified in this document.

PIV.A-5: The entire PM-10 range is a health based standard. We suggest that MMS clarify why the range of 1 to 3 microns was specified rather than identifying the entire PM-10 range. Specifically, the strategy presented implies that particulates between 4 and 10 microns will not cause adverse health effects.

PIV.A-6: The PFEIS should discuss the means by which offset requirements would be accomplished as opposed to simply recognizing that the regulations require offsets (also applies on PIV.D-46). Without such information, the decision-maker may decide to approve leasing in an area for which offsets are not available and thus could not be explored or developed. At a minimum, this issue should be recognized in the PFEIS and addressed in detail in each lease-specific EIS. We recommend that the MMS confer with our Air Program staff concerning the need to demonstrate conformity and include the results of such discussions in the PFEIS.

PIV.A-8: While we agree with the proponent's strategy of using a range of emission rates and development scenarios in the PDEIS, we expect a more quantitative discussion in subsequent (lease-specific) documents.

PIV.A-9: The MMS should include necessary mitigation measures (such as those presented in the discussion on this page) as part of the lease stipulations and commit to them in site-specific (leasing) EISs. A "commitment to commit" should be made in the PFEIS. An optional approach, given that equipment is upgraded regularly and regulations do change, would be to recommend that MMS commit to not issuing approval of any exploration or development action not in compliance with the provisions of the CAA and its implementing regulations.

PIV.A-10: In reference to the discussion on H_2S, the MMS should identify all waste bi-products associated with removal of H_2S and describe the treatment, storage, and disposal process to be used for such byproducts.

PIV.B-10: We commend the MMS for their inclusion of a discussion on global climate change, however, we suggest that MMS expand the discussion of the "incremental contribution" attributed to OCS activities. There are innumerable incremental contributions which when viewed cumulatively potentially affect climate change. We encourage the MMS to adopt an OCS strategy which employs minimizing all such "contributions" regardless of their relative individual impact.

The PDEIS also argues that oil and gas exploration and production will contribute to climate change (albeit incrementally) whether emissions occur in the United States as a result of OCS activities, or "elsewhere" as a result of "replacement production". The MMS attempts to use this to justify the level of emissions from OCS activities. We are uncertain about MMS's rationalization in that it accepts the inevitability of (unlimited) incremental contributions to global climate change as the general cost of doing business without considering conservation and alternative energy sources as means to "replace production".

PIV.D-35-38: It is unclear if the emissions scenarios discussed represent only new activity in the 1992-1997 period or if the scenarios represent emissions due to all activity in the 1992-1997 period. Please include both scenarios for evaluation. The emissions in the Table IV.D.1.a-8, for example, do not appear to comport completely with previous estimates EPA has received from MMS through MMS's EISs for the Central and Western Gulf of Mexico.

MMS should include a discussion about how it plans to coordinate protection of the NO_2 increment, the NO_2 National Ambient Air Quality Standards (NAAQS), and the O_3 NAAQS with the states of Louisiana and Texas. Please explain if MMS will immediately forward to those states' environmental agencies information about new platform well location and emissions strength.

PIV.D-37: MMS should provide a more quantitative analysis of the effects of offloading emissions. The discussion presented in the last paragraph is too qualitative.

PIV.D-38: In the second paragraph, MMS's suggestion that "OCS emissions are not the cause of Calcasieu ozone problems" raises two points. First, without a comprehensive field study (such as that currently being planned through Section 801 of the 1990 Clean Air Act Amendments) MMS has no data to support this position. Second, EPA is not contending that OCS emissions may be the only cause of Calcasieu O_3 problems. Clearly, the Section 801 study is needed to quantify how much, if any, of the O_3 problems throughout the Texas and Louisiana Gulf Coast area are due to OCS emissions.

EPA is currently working with MMS to assist MMS in performing an air quality screening analysis (using the Regional Oxidant Model) to gauge the impact of cumulative emissions/leases on onshore ozone nonattainment areas. The results of this analysis should be used in planning any long-term leasing initiatives in the Gulf of Mexico.

EPA has determined, through a rigorous analytic and public involvement process, that the Beaumont-Port Arthur and the Houston-Galveston-Brazoria areas are two of the most heavily O_3-polluted areas in the country. The MMS discussion on this page seems to underestimate those concerns.

PIV.D-38: Based on some of the above problems we have identified, the "Conclusion" section is not really substantiated, particularly the final sentence about the Gulf's air quality status.

PIV.D-305-307;D-480-484: The same general comments apply to the High Case and Cumulative Case as are outlined in comments pertaining to the Gulf of Mexico above.

PIV.D-417: The PFEIS should discuss impacts from increases in mobile source emissions from in-migrants into coastal regions which would result from implementation of the proposed action.

PIV.D-764: The statement suggesting that the offsets required to achieve CAA compliance would approach 5% of the existing onshore emissions is not supported in the document. We assume that MMS is implying that implementation of the proposed action would require a 5% reduction of existing onshore emissions to achieve no net gain. The PFEIS should include data to support that figure and specify where these emissions would be reduced or eliminated. The MMS should note that the ratio of offsets to emissions is generally greater than 1:1 in nonattainment areas, i.e., those areas where offsets are required.

WATER QUALITY

General: Although it may be true, as stated in the PDEIS, that "the impact from...municipal and waste water discharges (along the California coast)...is much greater than the amount expected from...the proposed action", the impacts expected from the proposed action should be quantified. It is not sufficient to merely state that impacts from a proposed action would be minimal or non-existent as compared to operations with massive impacts. The PFEIS should include a more detailed discussion of discharges expected from the proposed activity.

PIV.A-2: The PDEIS consistently refers to National Pollution Discharge Elimination System (NPDES) permit requirements as a means of achieving discharges within acceptable pollution control limits. The PFEIS should include a discussion of historical OCS compliance with the NPDES permit requirements, region by region. It is insufficient to state that the EPA regulates discharges through the NPDES permit process as evidence of compliance without indicating how often, and to what extent, the NPDES effluent limitations have or have not been exceeded. In addition, the PFEIS should discuss any new efforts being taken to prevent this type of pollution (Refers also to PIV.D-165.).

The discussion concerning marine debris should be expanded to include what is being done to eliminate the "chronic problem" of OCS generated (washed-up) beach litter. The PFEIS should expand the discussion and define, for example, what the impacts are to related ecosystems and biota.

PIV.A-24: The PDEIS states that reinjecting produced water is an expensive option and is not always technically feasible. We would like MMS to include in their PFEIS a discussion of factors which identify reinjection as feasible or infeasible.

PIV.A-26: The PFEIS should describe the process MMS uses to monitor discharges for compliance with NPDES permit requirements.

PIV.D-94: The first sentence in the summary of impacts on marine mammals (last paragraph on this page) states that operational discharges may adversely affect harbor porpoises. Yet, in the next sentence, the text states that "harbor porpoises are not expected to be affected by ...operational discharges". The PFEIS should clarify these statements.

PIV.D-160: As with our previous comments concerning lease stipulations, we recommend that MMS include a lease stipulation that pipelines needed for this proposal not be located in California estuaries as that assumption is being made in the EIS.

The PFEIS should operationally define "most" as used in "most drilling fluids will be discharged at depths below where migrating salmon might be contacted"; and, "no measurable decreases" as in "no measurable decreases to regional salmon populations are expected..."

PIV.D-237: We are concerned with the use of freshwater in drilling operations, especially during the drought conditions being experienced in California. It is acknowledged in the EIS that groundwater in the coastal region of California is already in an overdraft stage. We suggest that MMS consider the feasibility of using that source for OCS activities; consider how use of this resource would exacerbate the potential for intrusion of saltwater and other contaminates into fresh groundwater zones; consider the extent of impacts that existing water users would expect; and consider if drilling itself would have any effect on groundwater tables. We acknowledge that there are some optional sources presented in the EIS such as using desalinization equipment, for example. However, we recommend that the water needs/use issue be thoroughly investigated and firm commitments be established in the PFEIS for using alternatives to existing groundwater resources. We are concerned that the importance of this issue may be underestimated in the draft document as is evidenced by the statement that "methods for limiting potential impacts could be explored before plans for oil and gas activities are developed." We strongly advocate that such methods must be explored, discussed, and committed to in the PFEIS. This might also be a candidate for lease-specific stipulations.

PIV.D-419: We agree that "any increase in demand [for water] is a serious matter for water resources because of existing limitations in water supply." That is why we would like expanded discussion of the issue and commitment that the existing resource would not be impacted as a result of the proposed action.

PIV.D-11: The PFEIS should explain how the new landfall pipeline mentioned in the cumulative scenario described in Volume II meshes with references throughout Volume I to "no new landfall pipeline" requirements.

The PDEIS also discusses the potential need for one pipeline to be constructed to a shoreline landfall in the northern Santa Maria Basin (reference PIV.D-516). If this is the case, then impacts which would result from the landfall must be discussed herein and all prior and subsequent sections need to be modified to account for the landfall. This is also referred to on PIV.D-663. The PFEIS should describe the need and rationale for the assumption that such a landfall may be required.

We also suggest that MMS clarify whether new pipelines will be required to accommodate new wells. Given the recent media coverage concerning Point Arguello's (Chevron) pipeline from Santa Barbara to Los Angeles, in which it was stated that the existing pipeline(s) "...can't handle the (current) volume...," we suggest that MMS re-evaluate their statement that no new pipelines (other than connectors) would be needed to support this proposal.

PIV.D-256: The PFEIS should operationally define "minor economic losses" as in "...would sustain minor economic losses..." Specifically, MMS should consider whether these "minor" losses can be sustained by the commercial fisheries. The PFEIS should also explore and describe options which could be accomplished to eliminate or further minimize such losses.

PIV.D-443: We suggest that MMS clarify its conclusion that the proposed action would have a negligible effect on recreation resources and resource users. In that context, we contend that the additional OCS activities, e.g., additional visible platforms, could affect aesthetics to the extent that recreation activities and related economic benefits might also be affected. We recommend that the MMS re-visit this issue in the PFEIS.

PIV.D-449: The two tables on this page show a different number of platforms for southern California (18 v. 17). The PFEIS should reflect the correct figure in both tables.

PIV.E-2: Item 14 on this page, "Impacts On Recreation and Tourism," should reflect unavoidable impacts to aesthetics.

PV.F-2: We agree that consumption of offshore natural gas and oil could be construed as a long-term use of nonrenewable resources given the MMS's definition of long-term. We recommend, however, that the section address the fact that the proposal also involves a short-term extraction and long-term depletion of nonrenewable resources. This is consistent with the MMS's definitions of short-term ("the period of activity for the completion of the proposed action") and long-term ("the period of time after the completion of the proposed action").

State Government

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October 8, 1991

RECEIVED
OCT 11 8 04 AM '00
OFFICE OF THE DIRECTOR
MINERALS MGMT. SERVICE

Mr. S. Scott Sewell, Director
Minerals Management Service
1849 C Street NW, MS 4013
Washington, DC 20240

Dear Mr. Sewell:

RE: OCS Comprehensive Program

In regard to the release of the second draft of the Proposed OCS Natural Gas and Oil Resource Management Comprehensive Program, we offer the following comments.

The Draft Environmental Impact Statement for the Comprehensive Program, 1992-1997, states, "Adverse effects on seafloor habitats and associated organisms could occur from anchoring, drilling discharges, structure emplacement and removal, and pipeline emplacement." We are concerned about the potential for adverse impacts resulting from these types of OCS activities on the pinnacle trend in the waters south of Mobile Bay. We support the existing live bottom stipulation applied to the pinnacle trend and are encouraged by the recent efforts of the Minerals Management Service to determine the extent and significance of these live bottom areas. Regarding preparation of the Final Environmental Impact Statement, we recommend that the Minerals Management Service provide for any mitigating measure necessary to protect the biological assemblages present in the pinnacle trend from the adverse effects of anchoring, drilling discharges, structure emplacement and removal, and pipeline emplacement.

We appreciate the opportunity to comment on the second Draft Proposed Comprehensive OCS Natural Gas and Oil Resource Management Program, 1992-1997. We trust that our comments will be considered carefully in the formulation of the 5-year program.

We look forward to continuing the spirit of cooperation that has developed between us and the Department of the Interior on OCS matters.

Sincerely yours,

Ernest A. Mancini

Ernest A. Mancini
State Geologist and
Oil and Gas Supervisor

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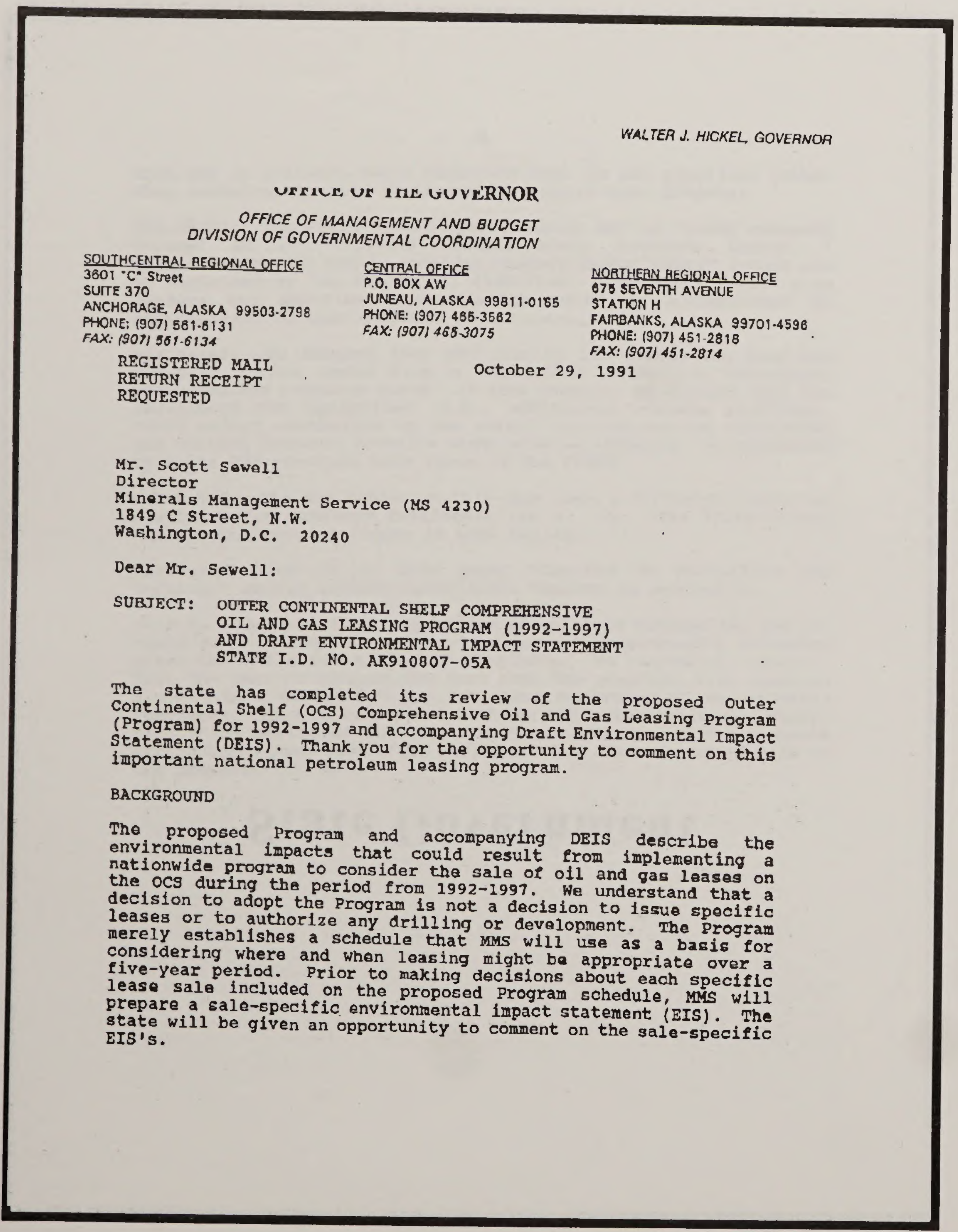
Copy to: Branch of Environmental Projects Coordination
Minerals Management Service

Associate Director for Offshore Minerals Management
Minerals Management Service



WALTER J. HICKEL, GOVERNOR

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REGISTERED MAIL
RETURN RECEIPT
REQUESTED

October 29, 1991

Mr. Scott Sewell
Director
Minerals Management Service (MS 4230)
1849 C Street, N.W.
Washington, D.C. 20240

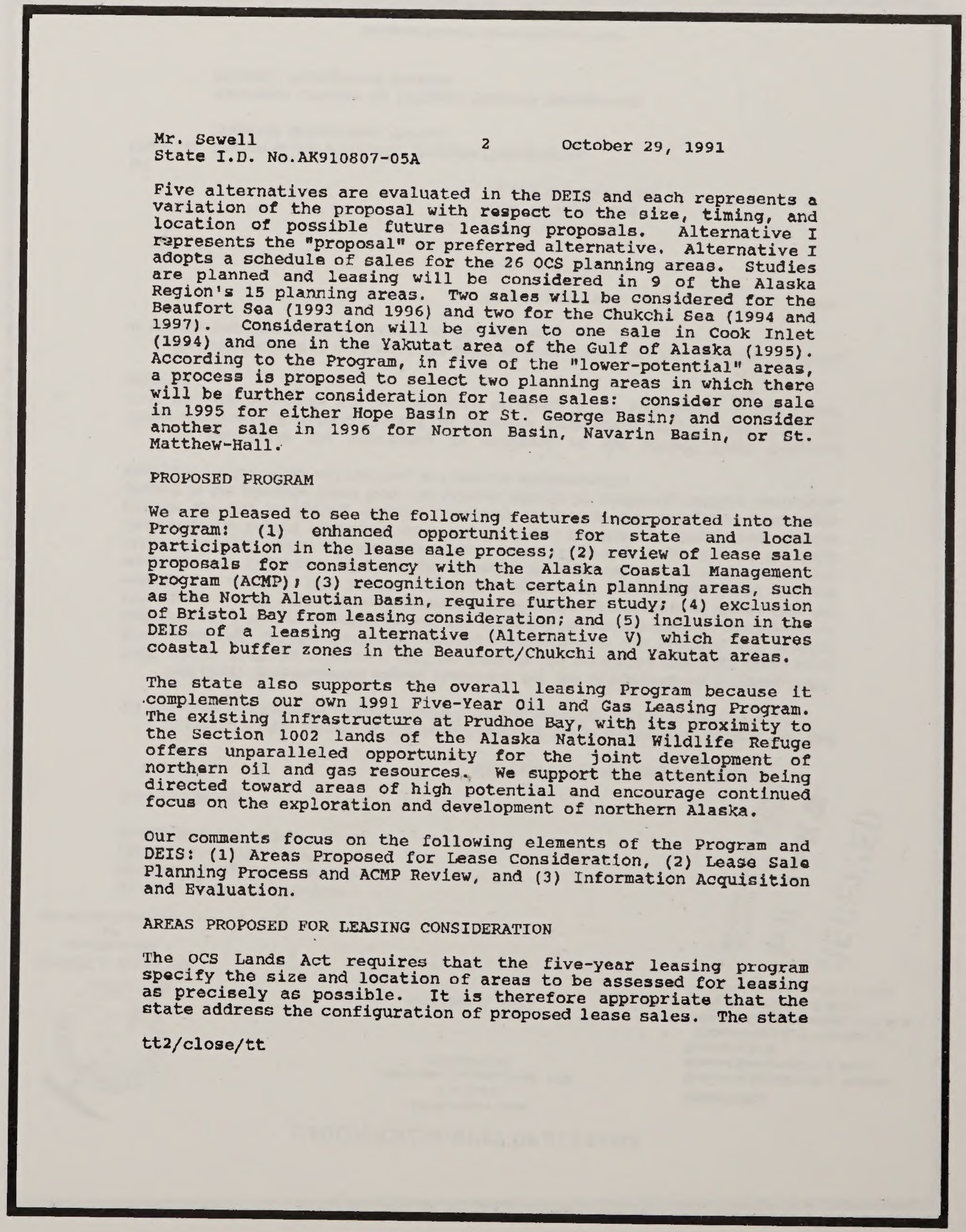
Dear Mr. Sewell:

SUBJECT: OUTER CONTINENTAL SHELF COMPREHENSIVE
OIL AND GAS LEASING PROGRAM (1992-1997)
AND DRAFT ENVIRONMENTAL IMPACT STATEMENT
STATE I.D. NO. AK910807-05A

The state has completed its review of the proposed Outer Continental Shelf (OCS) Comprehensive Oil and Gas Leasing Program (Program) for 1992-1997 and accompanying Draft Environmental Impact Statement (DEIS). Thank you for the opportunity to comment on this important national petroleum leasing program.

BACKGROUND

The proposed Program and accompanying DEIS describe the environmental impacts that could result from implementing a nationwide program to consider the sale of oil and gas leases on the OCS during the period from 1992-1997. We understand that a decision to adopt the Program is not a decision to issue specific leases or to authorize any drilling or development. The Program merely establishes a schedule that MMS will use as a basis for considering where and when leasing might be appropriate over a five-year period. Prior to making decisions about each specific lease sale included on the proposed Program schedule, MMS will prepare a sale-specific environmental impact statement (EIS). The state will be given an opportunity to comment on the sale-specific EIS's.



Five alternatives are evaluated in the DEIS and each represents a variation of the proposal with respect to the size, timing, and location of possible future leasing proposals. Alternative I represents the "proposal" or preferred alternative. Alternative I adopts a schedule of sales for the 26 OCS planning areas. Studies are planned and leasing will be considered in 9 of the Alaska Region's 15 planning areas. Two sales will be considered for the Beaufort Sea (1993 and 1996) and two for the Chukchi Sea (1994 and 1997). Consideration will be given to one sale in Cook Inlet (1994) and one in the Yakutat area of the Gulf of Alaska (1995). According to the Program, in five of the "lower-potential" areas, a process is proposed to select two planning areas in which there will be further consideration for lease sales: consider one sale in 1995 for either Hope Basin or St. George Basin; and consider another sale in 1996 for Norton Basin, Navarin Basin, or St. Matthew-Hall.

PROPOSED PROGRAM

We are pleased to see the following features incorporated into the Program: (1) enhanced opportunities for state and local participation in the lease sale process; (2) review of lease sale proposals for consistency with the Alaska Coastal Management Program (ACMP); (3) recognition that certain planning areas, such as the North Aleutian Basin, require further study; (4) exclusion of Bristol Bay from leasing consideration; and (5) inclusion in the DEIS of a leasing alternative (Alternative V) which features coastal buffer zones in the Beaufort/Chukchi and Yakutat areas.

The state also supports the overall leasing Program because it complements our own 1991 Five-Year Oil and Gas Leasing Program. The existing infrastructure at Prudhoe Bay, with its proximity to the Section 1002 lands of the Alaska National Wildlife Refuge offers unparalleled opportunity for the joint development of northern oil and gas resources. We support the attention being directed toward areas of high potential and encourage continued focus on the exploration and development of northern Alaska.

Our comments focus on the following elements of the Program and DEIS: (1) Areas Proposed for Lease Consideration, (2) Lease Sale Planning Process and ACMP Review, and (3) Information Acquisition and Evaluation.

AREAS PROPOSED FOR LEASING CONSIDERATION

The OCS Lands Act requires that the five-year leasing program specify the size and location of areas to be assessed for leasing as precisely as possible. It is therefore appropriate that the state address the configuration of proposed lease sales. The state

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supports the focused approach MMS has taken with the new Program. In addition, we recommend postponement of the following areas from being considered for leasing at this time:

1. The coastal buffer offshore of the Yakutat area, as depicted in Figure II.E.1-2 in the DEIS. This buffer zone should, if it does not already, include the areas around Dry Bay and Fairweather Ground; and,

2. The coastal buffer of tracts in the vicinity of Barrow - known as the "Barrow Deferral" in previous state comments from May 1991.

We continue to support creation of these two coastal buffer zones and recommend they be included in the preferred alternative (Alternative I). These buffer zones are presently described in Alternative V in the DEIS. The coastal buffer offshore of the Yakutat area was recommended for deferral in the state's comments on OCS Lease Sale 88 and in the state's May 1991 letter regarding the proposed Program. The state recommended the Barrow Deferral in our May 1991 comments on the proposed Program.

In addition, when the state commented on OCS Sale 126, Chukchi Sea, we stated that we believed the coastal blocks known in that sale as the "Point Lay Deferral" (Chukchi polynya) should be rescheduled as there will likely be an opportunity to offer these blocks in a future sale. In fact, if Alternative I is selected by MMS, this area is proposed for leasing consideration in tentatively scheduled sales for 1994 and 1997. When we commented on Sale 126, we believed that rescheduling these blocks provided for the establishment of a track record and development of proven technology for Chukchi exploration thereby minimizing risk to subsistence, habitats and water quality. We will look at proposed mitigation measures and possible coastal buffer zones or deferrals as we progress in the individual lease sale planning process for this area.

We also continue to support MMS's withdrawal of the North Aleutian Basin from the proposed five-year schedule.

Since the exact location of the tracts to be offered in the St. George and Norton Basins is not clear from the maps included in the DEIS, we reiterate our recommendation from May 1991 to delete the following tracts from these leasing areas:

1. St. George Basin - deletion of tracts within a 30-mile radius of the Pribilof Islands and Unimak Pass;

2. Norton Basin - deletion of tracts within 12 miles of the Yukon Delta;

The state has previously submitted extensive justification for deferral and deletion of these areas in comments on OCS Lease Sales 114, 70, 89 and 101. Adoption of these recommendations is consistent with the state's support for the Department of the Interior's continued commitment to a focused leasing program and will promote conformance with the OCS Lands Act by striking a proper balance between potential economic benefits and perceived environmental risks.

LEASE SALE PLANNING PROCESS AND ACMP REVIEW

In May 1991, the state specifically commented on two aspects of the proposed lease sale planning process including: (1) issuance of the Proposed Notice of sale (PNOS) concurrently with the Draft Environmental Impact Statement (EIS), and (2) the appropriate point in the process to conduct the ACMP consistency determination.

We appreciate MMS's interest in designing a schedule that accommodates the federal consistency determination and state ACMP review process. It appears the approach MMS is taking is similar to that used for the Norton Sound OCS Mineral Lease Sale. A coordination team was formed for that lease sale planning process and as a member of that team, the state was able to review preliminary drafts of planning and decision documents. We met with MMS to resolve many of the state's concerns prior to the release of formal documents, such as the DEIS and PNOS. Consequently, the state's review of these formal documents went smoothly, with all significant issues being raised and resolved early in the planning process. We recommend that MMS consider implementing this coordination team approach for the proposed Program.

In the absence of a coordination team approach, we believe sale-specific DEIS review should remain separate from the PNOS and ACMP review stages. The DEIS review provides the state an opportunity to evaluate areas being considered for leasing, leasing alternatives and the possible adverse environmental impacts of these alternatives at an early stage in the review process. This is a critical step in determining the state's position on proposed OCS lease sales and it should precede development of the PNOS. State concerns could then be addressed prior to issuance of the PNOS.

Specific procedures for accommodating the Section 19 and consistency review processes, including elevation of issues by MMS, coastal districts or state agencies, need to be developed. We believe this can be best accomplished through revision of the current Memorandum of Understanding (MOU) between MMS and the state. Our intent is to ensure there is adequate time to address both Section 19 and consistency concerns without delaying the OCS leasing process. We currently are working with MMS staff to revise and update the MOU and our goal is to develop procedures to accommodate all the planning steps in a timely fashion. Your continued support in this effort is greatly appreciated.

While it is premature at this stage in the review to attempt to identify potential conflicts between future leasing in the Alaska OCS region and the ACMP, we advise MMS that several concerns by local coastal districts have been expressed regarding lease sale configurations and mitigation measures. Specifically, the Kenai Peninsula Borough has suggested that MMS provide more specific information in the Final EIS with regards to the Cook Inlet and Shelikof Strait in Section IV Environmental Consequences; D. Environmental Impacts of Alternatives; 1. Alternative I - Proposed Action; for a. Base Case, b. High Case, and c. Cumulative Case. The Aleutians West Coastal Resource Service Area focused their comments on pages 22 and 23 of the Decision Document and recommends that MMS include mitigative measures specific to Unimak Pass.

Plus, Cenaliuriit, Bering Straits Coastal Resource Service Area, Bristol Bay Coastal Resource Service Area and the state have previously expressed concern that sale-specific mitigating measures adequately address oil spill cleanup capability, and subsistence use of marine mammals, such as beluga and bowhead whale, as well as walrus, seals, sea birds, bottomfish, halibut, crabs, and anadromous fish and their migratory routes. The state will review the proposed lease sale configurations, and mitigating measures at such time the EIS and PNOS are submitted for individual lease sales to ensure our concerns are adequately addressed.

INFORMATION ACQUISITION AND EVALUATION

The state is pleased that the proposed five-year program specifically recognizes the need for further studies in Alaska's most sensitive OCS planning areas. To assist MMS in focusing its study efforts, please refer to our recent comments on the Draft Regional Studies Plan (RSP) for FY 1993-1994. Comments we submitted to MMS in May 1991 regarding recommendations for studies were also reiterated in our comments on the Draft RSP.

DRAFT ENVIRONMENTAL IMPACT STATEMENT

The state has reviewed the Draft EIS accompanying the proposed Program and offers detailed comments in Enclosure I to this letter. Our comments focus on Sections III and IV of the DEIS.

SUMMARY AND DECISION DOCUMENT

The state has reviewed the Summary and Decision Document that accompanied the DEIS and offers detailed comments in Enclosure II to this letter.

We appreciate the opportunity to comment on the proposed Program and DEIS and if you have any questions regarding our comments, please do not hesitate to contact this office.

Sincerely,

Elizabeth A. Benson for

Dr. Paul C. Rusanowski, Ph.D.
Director

Enclosures

cc: Distribution List

OFFICIAL ENCLOSURE 1
DRAFT ENVIRONMENTAL IMPACT STATEMENT
SECTIONS III AND IV COMMENTS
STATE I.D. NO.AK910807-05A

The following detailed comments pertain to the Draft Environmental Impact Statement accompanying the proposed Program.

1. Terrestrial Mammals, pp. III-65-66: In addition to caribou, several other species of terrestrial mammals could be impacted by marine oil spills resulting from OCS activities. These include black and brown bear, Sitka deer, river otters, mink, foxes and other species which commonly feed or travel in intertidal areas. The biology of these species should be discussed as well as their susceptibility to oiling.

2. Waterfowl Populations, pp. III-68-72: The discussion of Alaskan waterfowl fails to mention population trends among the various species. For instance, Steller and spectacled eiders are decreasing in numbers and are being considered by U.S. Fish and Wildlife Service for inclusion on the list of threatened and endangered species.

3. Seafloor Habitats: Sections III and IV of the DEIS do not include a discussion of Alaskan seafloor habitats, although these habitats are discussed for all the other planning areas. Alaskan intertidal and subtidal benthic communities are no less important or less sensitive than those of the other areas proposed for leasing. Many of Alaska's intertidal and subtidal ecosystems are highly productive and ecologically unique. They also provide a vital food source for a variety of organisms including bottomfish, waterfowl, seabirds, sea otters, walrus, and several species of seals and whales. The impacts of oil and gas related activities on the seafloor could have serious ecological consequences which would also be felt by subsistence and commercial users. MMS is encouraged to provide relevant information in this area.

4. Areas of Special Concern, pp. III-75-81: The discussion of Alaskan areas of special concern fails to mention coastal ares designated by the state as critical habitat areas, game refuges, and sanctuaries. These area were given special status by the state legislature because of their high value to fish and wildlife and should be included in the DEIS and taken into account when calculating regional environmental sensitivities.

5. Subsistence Activities, pp. III-91-94: The most recent information is not always used in this section and the effects of the Prince William Sound oil spill on subsistence patterns in coastal areas are not examined. We encourage MMS to expand and update this section.

6. Base Case Impacts on Subsistence, pp. IV.D-264-266: The DEIS states that the impacts of the base case development scenario given for the proposed action (Alternative I) would not cause significant long-term impacts on subsistence patterns. However, the DEIS also states that, under this scenario, there is an 18-81% probability of one or more spills of 10,000 barrels or greater occurring over the 30-year life of the proposal. This represents a significant discharge and has not been adequately assessed with regard to its long-term effects on subsistence.

7. Cumulative Impacts on Subsistence, pp. IV.D-646-648: This section could be improved by discussing the extent to which subsistence users may become more dependent on offshore areas due to onshore industrial developments. Also, there could be some discussion of the possibility that an oil spill, resulting in an incidental take of marine mammals, might significantly reduce subsistence users' federally established harvest quotas.

8. Impacts of Alternative V, pp. IV.D-817-834: This section compares the biological impacts of Alternative V (deferral of leasing within the coastal buffer zones) with the impacts of Alternative I (no deferrals within coastal buffer zones). The DEIS states that for many species, including fur seals, walrus, polar bears, and waterfowl, the deferral of leasing within the proposed Beaufort/Chukchi coastal buffer zone will reduce the chance that a spill will occur and contact these species. However, the summary paragraphs within the same section of the DEIS contradict this statement by saying that, "impacts caused by oil spills (occurring under Alternative V) are expected to be about the same as Alternative I..." We recommend that this discrepancy be addressed in the Final EIS.

9. Pribilof Islands Spill Scenario, pp. IV.H-11-27: The DEIS presents a model for environmental effects of an oil spill in the Pribilof Islands during August. This scenario does not adequately represent possible environmental consequences or success in responding to a spill in either the Chukchi or Beaufort Seas, which are ice-covered much of the year. Since no conclusions concerning the fate or effects of spills in Arctic areas can be based upon this model, we recommend that an additional scenario be generated for either the Beaufort or Chukchi Sea which includes forecasts of oil impacts and spill response when ice is present.

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PETE WILSON
GOVERNOR

October 29, 1991

Honorable Manuel Lujan, Jr.
Secretary of the Interior
18th & C Streets, NW
Washington, DC 20240

Dear Secretary Lujan:

The Proposed Comprehensive Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program for 1992-1997, as it affects California, is essentially unchanged from the provisions of the Draft Proposed Comprehensive Program released earlier this year. Unfortunately, the Comprehensive Program proposes activities entailing unacceptable risks to marine and coastal resources. I believe that the Department's reasons for rejecting my previous comments on the Draft Proposed Comprehensive Program are inadequate, and the Department has not responded substantively to the specific points I raised. Accordingly, I again request that you accept the modifications contained in my April 24, 1991 letter to you.

The attachments to this letter contain detailed comments on the Proposed Comprehensive Program and its companion Draft Environmental Impact Statement (DEIS). This review is based on extensive participation by State and local agencies, various interest groups, and the public most affected by the proposed provisions of these documents. I ask that you carefully consider not only my modification requests, but also those comments made by these various interests, as contained in Attachments B through F.

In summary, my comments on the Proposed Comprehensive Program are as follows:

* The OCS Lands Act should be amended to provide a means to incorporate long term conflict resolution. The current Act does not allow for conflicts to be resolved. The current process only ensures that the same issues continue to be raised and debated, with no assurances to the coastal states that final resolution will ever occur. This fact is clearly demonstrated by the proposed Southern California lease sale, containing tracts which: (1) the State of California has continually requested to be deleted; (2) the California Coastal Commission has indicated that consistency with the State's coastal zone management program would not be possible; (3) the U.S. Fish and Wildlife Service has determined that cumulative impacts from development of existing leases alone would result in jeopardy to the Southern Sea Otter; and (4) Interior itself has recognized are too sensitive for leasing, as specified in the tract deletions of the Lease Sale 73 Memorandum of Agreement.

* Delete the proposed lease sale for 87 tracts in Santa Maria Basin and Santa Barbara Channel. Furthermore, delay new production for the existing leases which are not now covered by an approved development plan, until such time as: (1) adequate environmental studies are completed as recommended by the National Research Council; (2) cumulative impacts are studied and mitigated as requested by the adjacent coastal counties; (3) onshore impacts are minimized through requirements for onshore processing in consolidated facilities and for pipeline transportation, in conformance with the applicable local coastal programs; (4) the Lease Sale 73 and 80 stipulations are updated to reflect current environmental protection standards and are applied to both existing and future leases; and (5) the coastal states have had an adequate opportunity to address the question of jurisdiction over the expanded territorial sea.

* Attachment A.1 further contains specific modification requests to the proposed leasing procedures, including: (1) focus the environmental and resource studies on geologic basins rather than the overly broad planning areas; (2) adopt updated lease stipulations to ensure safe operations, including requirements for pipeline transportation and onshore processing in accordance with the applicable local coastal programs; (3) focus the environmental studies on information needed to address the question of risk and resource management, as opposed to the past emphasis on supporting the legal adequacy of the Program documents; and (4) revise the proposed time schedule for a lease sale consistency review and Final EIS to allow for more meaningful Section 19 consultations with the coastal governors.

The modification requests should also be addressed as alternatives and mitigation measures within the Final EIS. In addition, my specific comments on the DEIS are contained in Attachment A.2. In summary, I consider the DEIS to be deficient for the following reasons:

- The DEIS inadequately describes the potential impacts of the proposed leasing program on California.
- The DEIS disregards the lower economic value of Southern California OCS oil.
- The DEIS lacks functionally distinct alternatives as required by the National Environmental Policy Act.
- The DEIS draws conclusions where a previous National Research Council report indicated that such conclusions require further study.
- The DEIS fails to meet the requirements of the OCS Lands Act, in regards to insufficient alternatives, inadequate consideration of prior comments by the State of California, and flawed and inadequate considerations of the relative environmental sensitivity of different OCS areas.

In conclusion, the Proposed Comprehensive Program and the DEIS do not respond in any manner to concerns raised by California or to the specific requests I made in my April 24, 1991 letter. In particular, I wish to once again ask that Interior place this proposal within a proper perspective as to its potential contribution to the nation's energy supply. The entire California OCS if leased and developed at its maximum rate, would only result in the marginal addition of 150 millions of barrels of oil equivalent over a period of 20 years, and unlikely not until after the year 2010. By contrast, our existing energy policies will more than compensate for this foregone supply. Our vehicle emission standards alone will be contributing a savings of 180 million barrels of oil annually by the year 2010, and additional measures will only add to a significant reduction in California's demand for oil.

Again, I also recognize that if California is asking the nation to forego the reserves represented by the California OCS, it is also incumbent upon us to provide a reasonable alternative to help meet our overall energy needs. Let me reaffirm my commitment to pursue such an alternative through the development of additional strategies to broaden this State's energy mix and to pursue more aggressive energy efficiency measures. These proposals are now nearing completion, and should be recognized as California's proper contribution toward a more economically and environmentally sound alternative to further OCS leasing off our coast.

I urge you to reconsider your rejection of my previous request, and adopt a leasing program that reflects the needs of California. Should you require any further background on any of my recommended modifications or comments on the DEIS, please contact my Secretary for Environmental Protection, James M. Strock at (916) 445-3846.

Thank you for your time and earnest consideration of this matter.

Sincerely,

Pete Wilson

PETE WILSON

cc: S. Scott Sewell

ATTACHMENT A.1

GOVERNOR PETE WILSON
STATE OF CALIFORNIA

DETAILED COMMENTS ON THE DEPARTMENT OF THE INTERIOR'S
PROPOSED COMPREHENSIVE OCS NATURAL GAS AND OIL
RESOURCE MANAGEMENT PROGRAM

ATTACHMENT A.1

DETAILED COMMENTS ON THE U.S. DEPARTMENT OF THE INTERIOR PROPOSED COMPREHENSIVE OUTER CONTINENTAL SHELF (OCS) NATURAL GAS AND OIL RESOURCE MANAGEMENT PROGRAM FOR 1992-1997

GOVERNOR PETE WILSON
STATE OF CALIFORNIA

Introduction

The following comments are made pursuant to section 18 of the OCS Lands Act, as amended, in response to the Proposed Comprehensive OCS Natural Gas and Oil Resource Management Program for 1992-1997. As these comments address certain information gaps in the environmental assumptions used by Interior in the preparation of the Proposed Program, and as these comments address specific alternatives to the actions contained in the Proposed Program, the following should also be considered in conjunction with Attachment A.2 as my full comments on the Draft Environmental Impact Statement.

In preparation of these comments, an extensive public outreach process was conducted to solicit and incorporate the concerns of State and local agencies, the public, and other parties affected by the Proposed Program. Written comments were requested from these interests, and the responses are summarized and included verbatim in these attachments. Two public meetings were held in the areas adjacent to the proposed 87 tracts to be considered for leasing, and specific consultations were held with coastal local governments, the offshore oil industry, and environmental and community organizations. Summaries of all these meetings are also included in the subsequent attachments.

In general, the Proposed Program does not respond to the requests I made in my letter of April 24, 1991 on the Draft Proposed Program. For those provisions affecting California, the Proposed Program contains few changes from the Draft Proposed Program. Consequently, I am again requesting that the Proposed Program be modified in accordance with my April comments and as summarized below. The detailed justifications for these requests are contained in Attachment A to my April 24, 1991 letter, which is contained in this current package as Attachment A.3.

1. **The OCS Lands Act should be amended to provide a means to incorporate long term conflict resolution.**

   Interior has rejected this request based on the contention that:

   > ...the Proposed Program also is tailored to the characteristics of specific regions and planning areas and is sensitive to the concerns and needs of local areas. The new program will include increased efforts to gather information and to consult with interested and affected parties.

> We [Interior] hope that by taking this approach now we can facilitate the decisions ahead by helping to clarify and resolve issues prior to the development of future OCS programs. We also believe that the legislative amendments you propose will not be necessary with implementation of our new comprehensive and forward-looking approach to managing the OCS oil and gas program.

The purpose of my request was to point out that the OCS Lands Act process as currently constructed does not work as there are no assurances to the coastal states that issues will ever be resolved. With each new 5-Year Leasing Program and each Lease Sale, the same issues continue to be rehashed. This point is keenly demonstrated by the fact that the Proposed Program contains tracts for lease which: (1) the State of California has repeatedly requested to be deleted; (2) our coastal zone management agency has indicated that development proposals would not be consistent with the State's coastal management program; (3) the U.S. Fish and Wildlife Service has indicated that development projects would result in unacceptable cumulative impacts on marine mammals; and (4) Interior itself has recognized as too sensitive for leasing, as established through the Lease Sale 73 Memorandum of Agreement negotiated in accordance with the requirements of the OCS Lands Act. These results of a "comprehensive and forward-looking approach" as contained in the Proposed Program give scant assurance that issues can be resolved through existing procedures. A more permanent option is needed if negotiations under the OCS Lands Act are to be meaningful.

2. **Delete the proposed lease sale for 87 tracts in Santa Maria Basin and Santa Barbara Channel, and delay new production for the existing leases which are not now covered by an approved development plan.**

Interior has rejected these requests, but without substantive response to the reasons raised in my April 24, 1991 letter. To summarize my reasons regarding my request to delete the proposed lease sale of 87 tracts:

a. The Proposed Program gives only vague justification for the selection of the 87 tracts in accordance with the OCS Lands Act criteria. Interior's response to my request for clarification includes a justification that these tracts are "located in an area in which OCS operations and infrastructure already exist". The true facts are that only a portion of these tracts could be developed through existing infrastructure, and that the majority of the Santa Maria Basin tracts would require substantial new facilities both onshore and offshore.

b. The National Research Council has identified numerous data gaps in their 1989 report The Adequacy of Environmental Information for Outer Continental Shelf Oil and Gas Decisions: Florida and California. Interior has yet to indicate how these gaps will be remedied in a manner that will enable leasing decisions to proceed in the Southern California planning area by 1996. Interior's response provides no details in this regard other than the statement "Efforts to improve our data base are planned." The ability to make reasoned decisions on the size, timing, and location of lease sales obviously is dependent on whether the identified information gaps will be addressed prior to proposed sale date of 1996. If the information cannot be provided by 1996, then there is no justification for the proposed lease sale timing.

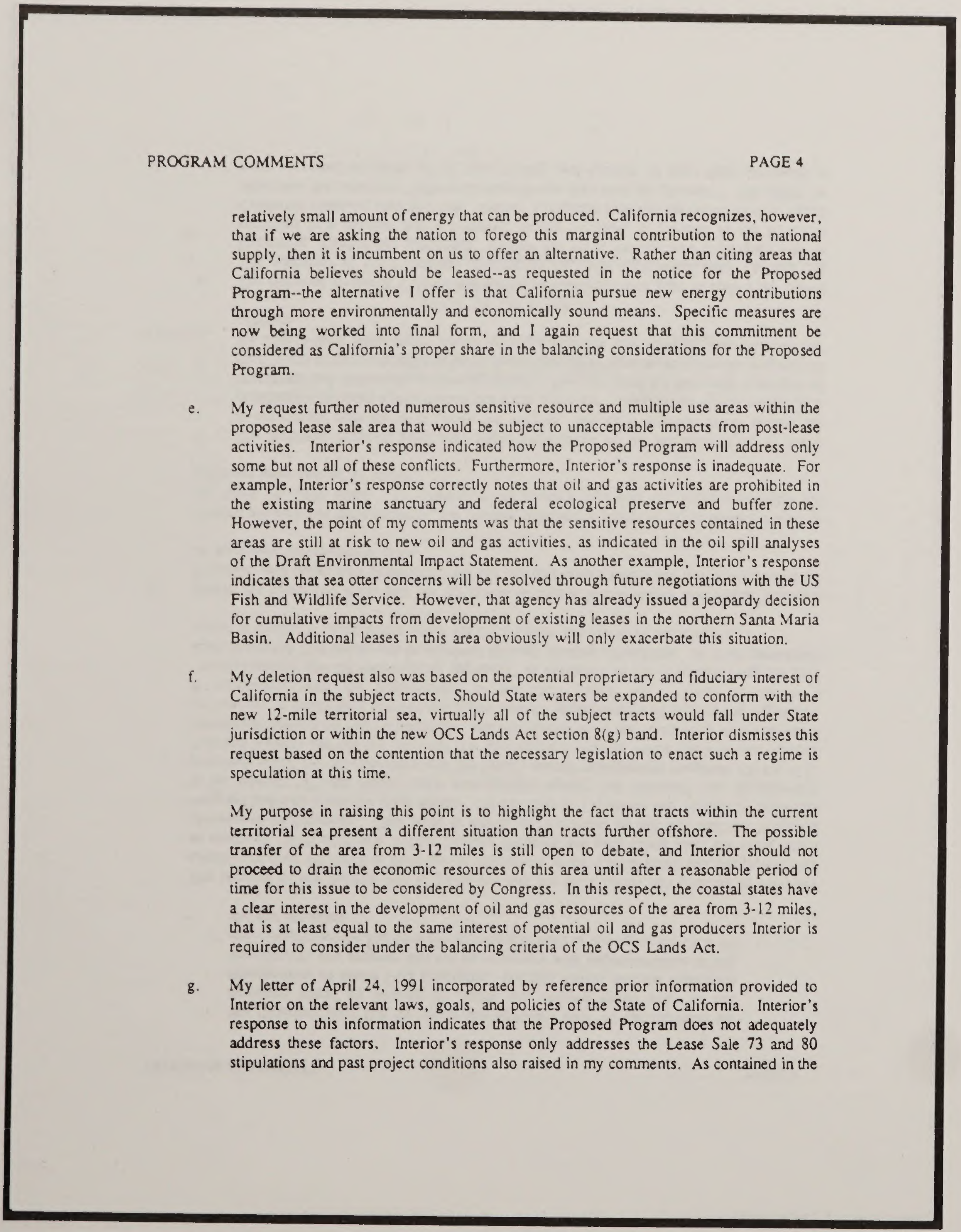
c. The Proposed Program does not provide an equitable sharing of development benefits and environmental risks among the various regions. Inadequate provisions are made in the Proposed Program to address the past, continuing, and potential future impacts to California especially in such issue areas as socioeconomic impacts, air quality, and onshore facilities. These points are detailed further in the attached comments on the Draft Environmental Impact Statement.

d. In my April 24, 1991 letter, I highlighted the contributions being made to the nation's energy supply from California's existing energy policies and programs. I further indicated that my intention is to pursue more aggressive strategies to provide a more balanced energy supply mix and encourage energy efficiency. Interior's response is that they are "impressed with the State's accomplishments," but that Interior intends to proceed with a sale of 87 tracts that "could make a substantial contribution" to meeting energy needs.

The basis of my request was to provide a meaningful measure to address the requirements of the OCS Lands Act to consider the location of each region with respect to, and the relative needs of, regional and national energy markets. My request was not a simple refusal to accept OCS leasing off this State with only vague platitudes supporting some other form of energy policy. Rather than simply transferring the burden of meeting these critical energy needs to some other part of the nation, my request was coupled with the commitment that California will pursue new actions to meet the energy supply we are asking the nation to forego by not developing the OCS resources off our coast. Our existing State energy policies already are moving us quickly in this direction. I intend to add to this progress through aggressive new strategies to be released this Fall. As such, I am offering a specific, viable alternative to this Proposed Program as it affects California, and it should be considered as such in the Secretarial Issue Document and Environmental Impact Statement.

Furthermore, the potential contribution of the 87 tracts must be put in proper perspective. As indicated in my April 24, 1991 letter, the entire California OCS if developed at its maximum rate would contribute at best an equivalent of 150 million barrels of oil annually over a period of 20 years sometime after 2010. The 87 tracts by themselves are only estimated to contain 510 million barrels of oil equivalent in total (risked base case), or only an equivalent of about 25 million barrels of oil annually for 20 years. By contrast, our existing vehicle emission standards alone are projected to result in annual savings of 120-330 million barrels of oil by 2010. Other new measures now being considered for California's energy strategy will more than compensate for the energy that would be produced under the Proposed Program.

Again, the impacts from the proposed 87-tract lease sale are unacceptable given the



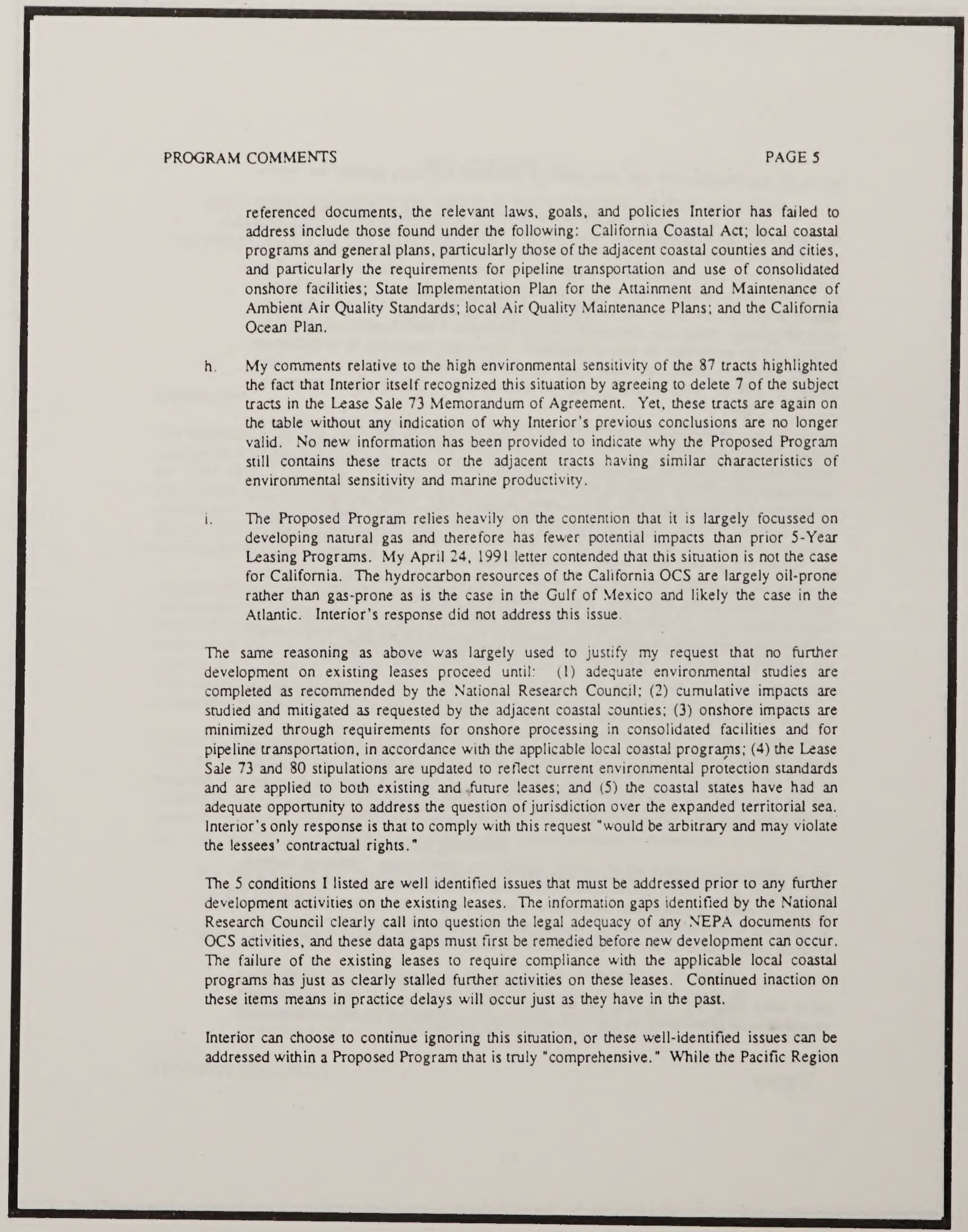
relatively small amount of energy that can be produced. California recognizes, however, that if we are asking the nation to forego this marginal contribution to the national supply, then it is incumbent on us to offer an alternative. Rather than citing areas that California believes should be leased--as requested in the notice for the Proposed Program--the alternative I offer is that California pursue new energy contributions through more environmentally and economically sound means. Specific measures are now being worked into final form, and I again request that this commitment be considered as California's proper share in the balancing considerations for the Proposed Program.

e. My request further noted numerous sensitive resource and multiple use areas within the proposed lease sale area that would be subject to unacceptable impacts from post-lease activities. Interior's response indicated how the Proposed Program will address only some but not all of these conflicts. Furthermore, Interior's response is inadequate. For example, Interior's response correctly notes that oil and gas activities are prohibited in the existing marine sanctuary and federal ecological preserve and buffer zone. However, the point of my comments was that the sensitive resources contained in these areas are still at risk to new oil and gas activities, as indicated in the oil spill analyses of the Draft Environmental Impact Statement. As another example, Interior's response indicates that sea otter concerns will be resolved through future negotiations with the US Fish and Wildlife Service. However, that agency has already issued a jeopardy decision for cumulative impacts from development of existing leases in the northern Santa Maria Basin. Additional leases in this area obviously will only exacerbate this situation.

f. My deletion request also was based on the potential proprietary and fiduciary interest of California in the subject tracts. Should State waters be expanded to conform with the new 12-mile territorial sea, virtually all of the subject tracts would fall under State jurisdiction or within the new OCS Lands Act section 8(g) band. Interior dismisses this request based on the contention that the necessary legislation to enact such a regime is speculation at this time.

My purpose in raising this point is to highlight the fact that tracts within the current territorial sea present a different situation than tracts further offshore. The possible transfer of the area from 3-12 miles is still open to debate, and Interior should not proceed to drain the economic resources of this area until after a reasonable period of time for this issue to be considered by Congress. In this respect, the coastal states have a clear interest in the development of oil and gas resources of the area from 3-12 miles, that is at least equal to the same interest of potential oil and gas producers Interior is required to consider under the balancing criteria of the OCS Lands Act.

g. My letter of April 24, 1991 incorporated by reference prior information provided to Interior on the relevant laws, goals, and policies of the State of California. Interior's response to this information indicates that the Proposed Program does not adequately address these factors. Interior's response only addresses the Lease Sale 73 and 80 stipulations and past project conditions also raised in my comments. As contained in the



referenced documents, the relevant laws, goals, and policies Interior has failed to address include those found under the following: California Coastal Act; local coastal programs and general plans, particularly those of the adjacent coastal counties and cities, and particularly the requirements for pipeline transportation and use of consolidated onshore facilities; State Implementation Plan for the Attainment and Maintenance of Ambient Air Quality Standards; local Air Quality Maintenance Plans; and the California Ocean Plan.

h. My comments relative to the high environmental sensitivity of the 87 tracts highlighted the fact that Interior itself recognized this situation by agreeing to delete 7 of the subject tracts in the Lease Sale 73 Memorandum of Agreement. Yet, these tracts are again on the table without any indication of why Interior's previous conclusions are no longer valid. No new information has been provided to indicate why the Proposed Program still contains these tracts or the adjacent tracts having similar characteristics of environmental sensitivity and marine productivity.

i. The Proposed Program relies heavily on the contention that it is largely focussed on developing natural gas and therefore has fewer potential impacts than prior 5-Year Leasing Programs. My April 24, 1991 letter contended that this situation is not the case for California. The hydrocarbon resources of the California OCS are largely oil-prone rather than gas-prone as is the case in the Gulf of Mexico and likely the case in the Atlantic. Interior's response did not address this issue.

The same reasoning as above was largely used to justify my request that no further development on existing leases proceed until: (1) adequate environmental studies are completed as recommended by the National Research Council; (2) cumulative impacts are studied and mitigated as requested by the adjacent coastal counties; (3) onshore impacts are minimized through requirements for onshore processing in consolidated facilities and for pipeline transportation, in accordance with the applicable local coastal programs; (4) the Lease Sale 73 and 80 stipulations are updated to reflect current environmental protection standards and are applied to both existing and future leases; and (5) the coastal states have had an adequate opportunity to address the question of jurisdiction over the expanded territorial sea. Interior's only response is that to comply with this request "would be arbitrary and may violate the lessees' contractual rights."

The 5 conditions I listed are well identified issues that must be addressed prior to any further development activities on the existing leases. The information gaps identified by the National Research Council clearly call into question the legal adequacy of any NEPA documents for OCS activities, and these data gaps must first be remedied before new development can occur. The failure of the existing leases to require compliance with the applicable local coastal programs has just as clearly stalled further activities on these leases. Continued inaction on these items means in practice delays will occur just as they have in the past.

Interior can choose to continue ignoring this situation, or these well-identified issues can be addressed within a Proposed Program that is truly "comprehensive." While the Pacific Region of MMS has begun some efforts in this regard, more complete measures should be incorporated into this Program as requested in my April 24, 1991 letter.

3. **Conduct environmental and resource studies within the Southern California planning area based on geologic basins.**

Interior's response misses the point of this request. In 1987, Interior reconfigured the Southern California planning area to add in the Santa Maria Basin. As a result, Interior combined areas that had been subject to frequent study (the old Southern California planning area) with another (Santa Maria Basin), that had been subject to far fewer prior lease sales and environmental studies. The Basin and the Santa Barbara Channel, as contained in the proposed lease sale, also represent considerably different socioeconomic, oceanographic, and biologic characteristics which, as shown in the analysis of the Draft Environmental Impact Statement, become blurred when attempting to produce an "average" Southern California overview. As a result, the information base is different for the two areas, and impact conclusions for one do not necessarily apply to the other. To overcome this limitation while still retaining the planning area configuration, my request was that new environmental studies and new environmental impact statements recognize these differences, and accumulate any new information in a manner that facilitates its use by decision makers and resource managers.

4. **In order to help assure safe operations: (1) update the Lease Sale 73 and 80 stipulations to reflect current technology and recent practices as reflected in the approval conditions of several recent projects; (2) require pipeline transportation of oil; and (3) require onshore processing in consolidated facilities, in accordance with the applicable local coastal program. These three provisions were requested to be implemented, in part, through a new stipulation to be added to existing and proposed leases.**

Interior's response to this request was to cite the existing regulatory process, without any consideration to the substance of the request. On the other hand, in order to minimize the anticipated impacts, the Draft Environmental Impact Statement bases its analysis on my requested changes. If Interior itself recognizes the value of such measures to reduce impacts as shown in the Draft Environmental Impact Statement, I fail to see why a commitment cannot be made to require them. The OCS Lands Act fully gives the Secretary of the Interior the authority to require such measures, even of existing leases.

The Proposed Program also relies heavily on the argument that production of OCS oil is safer than importing oil in tankers. If this statement is to be true, then use of pipelines must be required. The current lack of such a measure is clearly demonstrated by the Point Arguello project. These leases do not include pipeline stipulations, and as a result, oil is brought onshore and pipelined to the San Francisco Bay Area, only then to be taken to Los Angeles in tankers. This situation is clearly not acceptable to any of the involved parties, and a commitment to require and use pipelines must be made up front.

5. **Several suggestions were made to help resolve OCS controversies, but primarily, my request was for Interior to deal with past concerns and controversies through appropriate changes to the Proposed Program. Many such issues are discussed in the comments above.**

The controversies regarding the California OCS are not unknown. The same issues have been raised repeatedly through the many 5-Year Plans, lease sales, and projects proposed off our coast. Interior's response to many of my requested changes made reference to new provisions under the Comprehensive Program and to ill-defined future processes Interior intends to establish for consultation and coordination. Yet, in the same document, there is no substantive response to either my requests nor the requests made by the many participating agencies and public members. Ignoring California's requests at the broadest stage of the OCS Lands Act process gives scant assurances that these requests will be heeded at the later, more detailed stages. Again, to cite only the clearest example, the proposed 87 tracts include areas repeatedly requested in the past for deletion, including the 7 agreed to by Interior in the Lease Sale 73 Memorandum of Agreement.

In addition, my request specifically included a provision for 90-day commenting periods. The participation by agencies, local governments, and the public on OCS issues is quite high in California. To provide for a meaningful consultation process, adequate time must be given to incorporate and address these concerns. Interior has recognized this situation in the past by frequently giving time extensions to commenting periods. The Proposed Program should reflect this need for California up front, and provide adequate commenting time in the lease sale process.

6. **The focus of the Information Base Review step should be on ensuring that Interior's information is adequate to make leasing decisions, rather than only on whether the information is adequate to comply with the requirements of NEPA.**

The focus of this request was for Interior to consider the types of information being compiled through the environmental studies program. Too often, the studies are driven by the need for legal adequacy of the NEPA documents, rather than a focus on good science and good management information. Rather than doing studies to calibrate a model to produce an environmental impact statement, this program must address the resources susceptible to risk, the types of risks, and ways to obviate the risks.

Interior's response to this request referenced the new AEDP. While the discussion in the Proposed Program has considerably expanded on the AEDP, the substance of this new process is still unclear. The criteria to be used in each step still appear largely subjective. The added discussion in many cases has only added to confusion rather than clarity concerning Interior's proposal.

7. **The final environmental impact statement should be issued prior to the issuance of the Final Notice of Sale, and concurrent with the Proposed Notice of Sale.**

Interior's response is to reject this request and to retain their original proposal of issuing the final environmental impact statement after consultation with the governors occurs pursuant to section 19 of the OCS Lands Act. This situation is unacceptable, as it would provide inadequate information for the section 19 consultations and it is likely contrary to the requirements of section 19.

The final environmental impact statement contains the environmental assumptions used by Interior in selecting the size, location, and stipulations related to a lease sale. The draft documents often have proven inadequate in this regard, which again is demonstrated in the limitations of the Proposed Program environmental impact statement as discussed in the following attachment. Furthermore, the Final Environmental Impact Statement should serve as a common basis of environmental assumptions for any section 19 negotiations between Interior and the coastal governors. The process proposed by Interior makes this approach impossible.

Section 19 requires the Secretary of the Interior to consult with the affected coastal governor(s) on a proposed lease sale. Yet, Interior's response to my request indicates that a lease sale could substantially change after this consultation occurs, based on the analysis in the final environmental impact statement. Any such changes would require subsequent consultation pursuant to section 19.

At a minimum, the leasing process for California planning areas should require the final environmental impact statement to be issued with the Proposed Notice of Sale.

8. **A consistency determination should be made prior to the section 19 consultations.**

Interior's response is to reject this request, and indicate that a consistency determination will be made after the final environmental impact statement is released. This approach makes the full environmental and lease sale information available to only one unit of state government; whereas, the previous comment indicates that Interior is not willing to provide the same level of information to a governor who represents all of an affected state. For California lease sales, Interior's process should provide for the section 19 comments to occur after all other consultations have occurred. As indicated by the process used to develop these comments, the section 18 and 19 comments submitted by California are based on extensive involvement by the public and the affected agencies, including the California Coastal Commission. This information should continue to be available as the OCS Lands Act consultation occurs. This situation existed prior to the Supreme Court's decision related to lease sale consistency determinations. Interior has not provided adequate justification to pursue a different process.

ATTACHMENT A.2

GOVERNOR PETE WILSON
STATE OF CALIFORNIA

DETAILED COMMENTS ON THE DEPARTMENT OF THE INTERIOR'S DRAFT ENVIRONMENTAL IMPACT STATEMENT

ATTACHMENT A.2

DETAILED COMMENTS ON THE U.S. DEPARTMENT OF THE INTERIOR DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED OCS NATURAL GAS AND OIL RESOURCE MANAGEMENT PROGRAM FOR 1992-1997

GOVERNOR PETE WILSON
STATE OF CALIFORNIA

A. Summary

The DEIS is deficient. The DEIS inadequately describes the potential impacts of the proposed leasing program on California; disregards the lower economic value of Southern California OCS oil; lacks functionally distinct alternatives as required by the National Environmental Policy Act; draws conclusions where a previous National Research Council report indicated that conclusions must await further study; and fails to adequately address the requirements of the OCS Lands Act. These deficiencies prevent the Secretary of the Interior from reaching decisions regarding the proposed program that best benefits the nation and California.

B. Introduction

These comments address the July 1991 Draft Environmental Impact Statement for the Proposed Comprehensive Outer Continental Shelf Natural Gas and Oil Resource Management Program, 1992-1997; and the Summary and Decision Documents for the Proposed Comprehensive Program. These documents are collectively referred to in these comments as the DEIS.

C. The DEIS does not adequately describe potential impacts.

1. The DEIS does not use reasonable assumptions to assess impacts. This results in gross underestimates of environmental impacts in the Southern California planning area as follows:

Oil Spills

The DEIS underestimates potential oil spills that may result from the proposed leasing activity by assuming that pipelines, rather than tankers, will be used to transport produced oil. While California remains steadfast in our insistence that pipelines be used for OCS oil transport in this area, this is not a guaranteed outcome. Without stipulations in OCS leases, industry will continue to make investment and transportation decisions which could involve tankers. As the use of oil tankers involves higher risks of spills (DEIS IV.D-12: the volume of spills from tanker operations is assumed to be over four

times greater than pipeline spills and the probability of a tanker spill is approximately twice that of a pipeline spill), potential impacts are greater. Either Interior must commit to lease stipulations requiring oil to be transported by pipelines as requested in my April 1991 comment letter, or the assessment of impacts in the DEIS must include those caused by oil tankers.

Decisions by Chevron and Texaco to pipe currently produced OCS oil north to the San Francisco Bay area and then tanker it south to the Los Angeles area for use is a good example of what can occur and is an unaddressed impact in the DEIS. This recent experience demonstrates the inadequacy of the DEIS and of the OCS Leasing Program to require pipeline transportation. It also reduces the intended social cost savings of the OCS program (Summary and Decision Document page 15) as the threat of spills from import tankers is not reduced but it is replaced with the threat of spills from domestic oil tankers. A similar situation has occurred in the past as the limited availability of refineries to process the lower grade oil produced in this area resulted in the use of tankers to transport crude to the Gulf states and Japan. The DEIS should evaluate impacts based upon the use of tankers and the ultimate destination of oil produced in the Southern California area OCS.

The DEIS implies that the spread of oil from a spill was estimated rather than modeled (DEIS IV.D-28). This estimation assumes onshore impacts will occur south of Morro Bay (DEIS IV.D-87). Wind and wave conditions in this area can cause spill impacts in Morro Bay and the coast northward. The final EIS should assume that a spill in the proposed lease area will impact a larger area than assumed in the DEIS.

The DEIS places a high reliance on spill response equipment to avoid shoreline impacts. Experience has shown that present spill response equipment under wind and wave conditions common in this area is incapable of significantly reducing the risk of a large oil spill reaching sensitive estuaries, wetlands and the Channel Islands. Measures which can substitute for the protection assurances the DEIS places on spill response (DEIS IV.D-135,165) are advances in cleanup technologies and increasing the buffer zone between leases and sensitive areas. Currently, the only available option is increasing the buffer zone. The DEIS should specify the level of protection it attributes to the use of containment and cleanup equipment. Further, larger buffer zones should be evaluated in the DEIS.

Air Emissions

The DEIS underestimates the amount of air emissions, it does not assess the availability of potential offsets, and it does not acknowledge that active but as yet undeveloped OCS leases will exert demands for offsets.

The DEIS does not include increases in air emissions which could occur with the use of oil tankers described above. Additionally, as this area will be impacted by active but as yet undeveloped leases and is in a nonattainment area, air emission offsets will be less available. The implication that emissions from future as well as current lease holders can be economically offset is conjecture. The DEIS should assess the availability and cost of offsets for the full development of all current leases and the proposed lease sale.

The DEIS indicates that as a minimum, this project will increase emissions up to 5 percent of existing onshore emissions (DEIS IV.D-46). Given the nonattainment status of the area, this is a significant impact. Additionally, in the 1990 revisions to the federal Clean Air Act, Congress recognized the significant air quality impacts from OCS oil operations when it placed authority over OCS air emissions with EPA. The DEIS should be revised to address these air quality issues.

Onshore Facilities

The DEIS assumes that no new onshore facilities will be required (DEIS IV.D-11,191 and 234). As existing onshore facilities are limited, some are approaching the end of their useful life and are distant from portions the proposed lease sales, it is unrealistic to assume that onshore construction impacts will not occur in the next 35 years. A case in point is that there are currently no existing offshore pipelines and onshore support facilities in the northern Santa Maria Basin area. In this area recent experience with the San Miguel project demonstrated that the distance and the type of crude oil involved precluded the pipeline transport of oil to existing onshore facilities. The DEIS should describe potential impacts that could occur with new onshore facilities and new pipelines.

2. The DEIS underestimates the sensitivity of marine resources and potential impacts upon them. The DEIS claims that any impacts on marine resources would be minor and short-term in nature (page iv of the introduction). As discussed above, more severe and longer-term impacts will result when more realistic assumptions are used. Examples of impacts underestimated in the DEIS include the following:

   - An oil spill caused by the proposed project could seriously impact a substantial portion of the world's population of the threatened southern sea otter. The DEIS assumes that an oil spill would occur and travel south of the main populations of sea otters (page IV.H-28). However, during several months of the year, nearshore currents in this area would push an oil spill northwards, and into the center of this threatened species' population. Impacts from such a spill could depress sea otter populations for decades.

   - An oil spill could impact the only U. S. breeding population of northern fur seals outside of Alaska. These seals use portions of San Miguel Island, in the Channel Islands, as their rookery area, and an oil spill during the breeding season could jeopardize the majority of this unique population.

   - The Channel Islands support a large majority of the world's population of Xantus Murrelets. These birds are extremely sensitive to oil spills, and a spill during the nesting season could decimate the world's population of this species.

   - The Channel Islands support the world's largest rookeries for both the California sea lion, and the northern elephant seal. An oil spill during the pupping season could

seriously harm both these species.

   - The only U.S. breeding population of the endangered California brown pelican nests in the Channel Islands. This species is vulnerable to major harm if an oil spill were to occur during the nesting season of this species.

   - The only U.S. breeding population of the black storm petrol occurs on the Channel Islands. The entire U.S. breeding population of this species is at risk in the event of an oil spill in this area.

   Overall, the marine resources of the Southern California planning area are far more sensitive than the DEIS describes, and potential OCS leasing impacts are far greater than the DEIS indicates. The DEIS needs to be revised to more accurately reflect this greater sensitivity and potential for impact.

3. The DEIS inadequately considers impacts on commercial fishing vessel berthing space and berthing costs due to proposed leasing activities. Crew boats, supply boats, and service vessels for offshore oil activities would compete for berthing space with commercial fishing vessels. The DEIS states that such conflicts are not expected at Port Hueneme. However, in other ports, competition for space could displace commercial fishing vessels from existing berths, or drive up costs to levels that would be a hardship for fishing vessel operators. This potential impact needs to be better assessed in the DEIS.

4. The DEIS fails to discuss the proposed Morro Bay National Marine Sanctuary. If designated, the resulting Marine Sanctuary could include up to 34 of the tracts proposed for leasing in the Santa Maria Basin. The DEIS should include an assessment and evaluation of the implications of sanctuary designation on the proposed lease sale. In addition, the DEIS should assess the impacts the proposed lease sale would have on the proposed sanctuary and its designation.

5. The DEIS does not describe how existing federal oil spill response plans and programs will accommodate California's new oil spill response capabilities. California's new Office of Oil Spill Prevention and Response provides the State with improved capabilities to prevent and respond to marine oil spills. These new capabilities need to be coordinated with federal response capabilities to ensure optimum response to oil spills. The DEIS should include a description of how this will be accomplished.

6. The DEIS discounts the cumulative impacts caused by the proposed lease sale. While the assessments of environmental impacts in the DEIS are typically characterized as low for the proposed lease sale area, many of these impacts are significant when viewed from the cumulative impact perspective. This is pointedly clear in regard to threatened and endangered species. The DEIS fails to assess meaningful cumulative impacts in many instances as it averages impacts over vast areas such as the entire Pacific Region and the entire Southern California Bight. A selected example follows:

For assessing cumulative impacts on sea otters, the DEIS assumes that eleven major spills will occur with uniform frequency and spatial distribution (DEIS IV.D-519) along the entire length of the central and southern California coast. In doing so, no additive effects from multiple spills are assumed. Consequently, the DEIS finds the cumulative impacts of oil spills from all sources combined on California sea otters to be practically identical to the assessed impacts attributed solely to the proposed lease sale. This is not reasonable. The DEIS should assume that oil spills will occur most frequently where oil activities are most concentrated. The DEIS should be revised to present a full and detailed reassessment of cumulative impacts on sea otters and other marine and coastal resources where this same assumption is used.

Additionally, the DEIS does not reference the U.S. Fish and Wildlife Service Endangered Species Act jeopardy conclusion related to the 1986 Platform Julius proposal. This is relevant to the cumulative impacts assessment as the Service concluded that full-field development in the Santa Maria Basin would jeopardize the sea otter.

The DEIS should be revised to more adequately assess potential cumulative impacts.

D. The DEIS does not accurately describe and evaluate critical economic factors

The DEIS uses an assumption that oil in every proposed lease sale area is of the same value of $18 per barrel. There is sufficient information available from present OCS activities in the Southern California area to reasonably conclude that the economic value of OCS oil in this area is significantly less than that of other proposed lease sale areas. According to Interior's 1990 OCS report, "Federal Offshore Statistics: 1989" (pages 53,55) California OCS oil has a market value which is 30 percent lower than the national average for OCS oil. The analysis and comparison of economic benefits should be revised, should be based on available information, and should be area specific.

Very detailed data for onshore economic impacts have been generated for actual project development through the Tri-County Socio-Economic Monitoring and Mitigation Program. The DEIS should describe this program and make use of this information to more accurately characterize and predict socio-economic impacts from future development. California has repeatedly raised this source of data, and Interior continues to ignore it.

E. The DEIS lacks adequate alternatives as required by NEPA.

The DEIS fails to list, describe and assess functionally distinct alternatives to the proposed project. The National Environmental Policy Act of 1969 (NEPA) requires a detailed statement on alternatives to the proposed action. However, the alternatives described in the DEIS all presume continued high reliance on imported and offshore produced oil to meet the nation's energy needs. Therefore, each alternative contains the risk of additional oil spills in the future, with attendant impacts on California's coastal resources and economies. Furthermore, this approach denies the Secretary of the Interior the opportunity to evaluate and select from

an array of alternatives that offer a functional difference between them. In my comments of April 24, 1991, I requested that Interior describe how the proposed leasing program would fit in with other federal efforts to meet the nation's energy needs. Interior's response, as described within the Summary and Decision Document (pages 9-10), is apparently that under all conditions the federal effort to meet the nation's energy needs calls for maximum leasing and production from federal OCS areas. As described in my April 24, 1991 comments, and in my comments on the Comprehensive Program, I believe that increased conservation and energy efficiency, combined with greater use of alternative energy sources, offers a real alternative to continued high reliance on offshore produced oil. This alternative warrants detailed description and discussion in the DEIS, and in fact NEPA requires this.

F. The DEIS concludes that no significant impacts will occur where a previous National Research Council report has indicated that conclusions must await further study.

In response to President Bush's request, the National Research Council (NRC) prepared their 1989 report, The Adequacy of Environmental Information for Outer Continental Shelf Oil and Gas Decisions: Florida and California. The report concluded that information available on physical oceanography is inadequate and that socioeconomic information is doubtful. The DEIS draws conclusions based on inadequate physical oceanography and socioeconomic information without regard to the NRC report (DEIS III.104-107 and III.149-160). While the Decision Document mentions the need for the three to four year studies to address these concerns, no assurances are given that this work is scheduled or funded. The DEIS should be expanded and these conflicts should be resolved. As requested in my April 1991 letter, the studies Interior intends to pursue to correct these deficiencies must be identified in order for California to judge whether the proposed timing of a 1996 lease sale is justifiable.

G. The DEIS fails to adequately address the requirements of the OCS Lands Act.

1. The DEIS listing of alternatives is insufficient to allow Interior to select the alternative five year leasing program that best meets the nation's and California's energy needs. The OCS Lands Act requires that the Secretary of the Interior, considering environmental values and other factors, prepare a five-year leasing program that will best meet these needs. As discussed earlier, the DEIS describes only those alternative programs that involve continued high levels of oil imports and OCS oil production. No alternatives are discussed that involve substantially increased conservation and energy efficiency programs, and greater use of alternative energy sources, to reduce the nation's reliance on imported and OCS produced oil. This deficiency of the DEIS denies the Secretary of the Interior the ability to evaluate and select an alternative that may have lower potential impacts on California and other areas of the nation, and prevents the Secretary of the Interior from adequately meeting the requirements of the OCS Lands Act.

2. The DEIS fails to adequately consider the previous comments of the State of California. The OCS Lands Act requires the Secretary of the Interior to base the Five Year Program

on consideration of the laws, goals, and policies of affected states. These were clearly stated in my previous letter of April 24, 1991. However, Pages 19-21 of the Summary and Decision Document indicate that Interior will consider these comments at a later time, rather than addressing them in the DEIS. The DEIS and the proposed Five Year Comprehensive Program will not be consistent with the requirements of the OCS Lands Act until our comments have been adequately considered by Interior.

3. The DEIS contains flawed and inadequate considerations of the relative environmental sensitivity of different OCS areas. As described earlier, the DEIS seriously underestimates the environmental sensitivity of the Southern California planning area. In addition, the documents' environmental sensitivity analyses fail to address air quality sensitivity, which is critical in the Southern California planning area. Furthermore, the sensitivity analyses do not present an analysis and ranking of the overall environmental sensitivity of different OCS areas, making it difficult for Interior and the reader to consider environmental sensitivities when comparing sites. As a result of these deficiencies, the DEIS fails to adequately address the provision of the OCS Lands Act requiring consideration of the environmental sensitivities of different areas of the OCS when preparing a five year leasing plan.

H. Summary

These deficiencies of the DEIS prevent the Secretary of the Interior from adequately assessing the environmental impacts of the leasing proposal, from choosing from a selection of valid and differing alternatives, and from selecting the leasing program that would best meet the needs of the nation and California.

STATE OF CALIFORNIA—THE RESOURCES AGENCY PETE WILSON, Governor

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200

October 17, 1991

Director
Minerals Management Service (MS-4013)
1849 C Street, NW
Washington, DC 20240

Subject: OCS Comprehensive Program

Dear Sir:

Enclosed are the California Coastal Commission's comments on the Proposed Comprehensive OCS Natural Gas and Oil Resource Management Program for 1992-1997. These comments were unanimously adopted by the Coastal Commission by a vote of 11-0, on October 9, 1991.

If you have any questions regarding these comments, please contact me or Christiane Parry at (415) 904-5245.

Sincerely,

Susan M. Hansch

Susan Hansch, Manager
Energy and Ocean Resources Unit

Enclosure

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STATE OF CALIFORNIA—THE RESOURCES AGENCY
PETE WILSON, Governor

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
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Report Date: 9/27/91
Staff: CP/RB/SF
Hearing Date: 10/09/91
Item Number: 11
Commission Action: Adopted
Vote: 11-0

CALIFORNIA COASTAL COMMISSION COMMENTS
TO THE DEPARTMENT OF THE INTERIOR
ON THE PROPOSED COMPREHENSIVE OCS NATURAL GAS AND OIL RESOURCE MANAGEMENT PROGRAM FOR 1992-1997

EXECUTIVE SUMMARY

The Outer Continental Shelf Lands Act (OCSLA) requires the Secretary of the Interior to solicit suggestions from federal agencies, coastal states, and other parties during the preparation of a five year oil and gas leasing program. The Proposed Program is the second step in a two-year, four-part process that is completed with the adoption of a final program. In April, 1991, the Commission submitted comments to the Secretary of the Interior on the previous draft, referred to as the Draft Proposed Program for 1992-1997.

The Commission Recommends that the Proposed Southern California Lease Sale Be Deleted from Five-Year Program

The Commission recommends that the 87 blocks in the Santa Maria Basin and the Santa Barbara Channel slated for a 1996 lease sale be deleted. No further leasing should be proposed in this area until, at a minimum: (1) the environmental, socioeconomic, and oceanographic studies necessary to fully determine impacts are completed, (2) it is demonstrated and justified that leasing, exploration, and development can occur in an environmentally safe manner and will not pose unacceptable risks and other costs, and (3) the federal government places OCS leasing in the context of a national energy policy that is designed to reduce the nation's oil dependency through a coordinated program of conservation, energy efficiency, development of alternative, more environmentally benign fuels, and development of renewable energy sources.

Lack of Responsiveness to Previous Comments

The Commission found Department of Interior's (DOI) response to comments previously submitted on the Draft Proposed Program to be very inadequate. In spite of the 712 public comments that DOI received on the Draft Proposed Program, the Proposed Program

is virtually identical to the Draft Program, with only minor substantive changes. Many of the Commission's comments received no response at all. The Commission recommends that Mineral Management Service (MMS) respond to all substantive, relevant concerns.

Section 18 Analysis Is Flawed

Section 18 of the OCSLA establishes the criteria that DOI must consider in decisions on the timing and location of oil and gas leases. The decision is supposed to strike a balance between the potential for environmental damage, the potential for discovery of oil and gas, and potential coastal zone impacts. The Section 18 analysis for the Proposed Program is inadequate. Environmental and coastal zone impacts are not given equal weight with the potential for oil and gas resources in a given area. Of the eight required criteria, one appears to have considerably greater relative weight in the selection of tracts for leasing: the interest of potential oil and gas producers. In particular, there should be a greater consideration of environmental and social costs, and more emphasis placed on the applicable laws, goals, and policies of affected states.

Proactive Effort Is Needed to Address Environmental Risks and Potential Mitigation

The Commission recommends that DOI use the Five-Year Lease Program process as a planning vehicle to analyze and develop program-wide and area-wide policies focused on eliminating, minimizing or mitigating environmental risks or impacts. The policies could then be adapted and tailored to fit regional and local circumstances.

National Energy Strategy

The National Energy Strategy (NES) claims to "lay the foundation for a more efficient, less vulnerable, and environmentally sustainable future" (Executive Summary, 2). The NES also claims to offer a "balanced program of greater efficiency, use of alternative fuels, and the environmentally responsible development of all U.S. energy resources" (Ibid, 8). The Commission takes issue with these statements and how MMS has interpreted them in the Proposed Program.

MMS's Proposed Program does not fully evaluate the true total costs (including environmental and health risks) associated with OCS and Arctic National Wildlife Refuge (ANWR) development and balance those costs against the costs and total benefits of implementing energy efficiency and renewable resource options. The Proposed Program's claim that OCS production will provide a supply hedge for the United States, and thereby make it less vulnerable to OPEC oil supply disruptions is misleading. The NES and MMS's Proposed Program continues to emphasize OCS and ANWR development at the expense of investing into viable cost-effective energy efficiency and renewable resource programs, and therefore is not directed toward the environmentally responsible development of the Nation's energy resources.

Energy efficiency and renewable energy sources have many advantages over fossil fuel usage. While oil reserves offer finite energy resources, efficiency improvements and renewable energy sources continue indefinitely. In addition, burning fossil fuels causes significant and irreversible degradation to the environment, leading to air pollution and acid rain.

Cost effective energy efficiency and renewable resources that can save many more barrels of oil equivalent than potentially exists in the OCS and ANWR are available today. The State of California has instituted a number of effective and innovative programs aimed at reducing fossil fuel use.

The NES and the MMS Proposed Program fail to give meaningful consideration to the benefits of energy efficiency and renewable resources and fail to evaluate the true total costs associated with the drilling for oil and gas in the OCS and ANWR. The Commission continues to believe that the National Energy Strategy should emphasize a least cost, least vulnerable, most environmentally sustainable strategy, which has energy conservation, energy efficiency, and renewable resources as its cornerstone; and, that this should be the backdrop against which future oil and gas leasing decisions are made.

DEIS Analysis Is Inadequate and Too Broad-brush

The usefulness of the DEIS as a decision-making tool is limited by the high level of generality employed. The analysis of a given impact is relatively cursory and based on a large number of sometimes questionable assumptions and unsubstantiated probabilities.

The Commission found the conclusions made for the individual impacts in the DEIS to be lacking. Except in the case where no impact is found, there is little attempt to value the importance or significance of a given impact.

The National Academy of Sciences found in its 1989 study of the adequacy of information for leasing decisions, that "without a better knowledge of the physical oceanography of the region and the interactive effects of OCS activities with other disturbances, any analysis of potential oil spill impacts and impacts of other discharges from OCS activities in the southern California region will be incomplete." The Commission questions the accuracy of the DEIS oil spill analysis, given the lack of the necessary underlying data on physical oceanography.

Much of the section on cumulative impacts consists of a listing of the various sources of impacts with little attempt to assess how, when added together, they could affect a particular resource. The cumulative impact analysis should be modified to reflect a true assessment of the additive impact of past, present, and future actions or activities on a resource.

Other deficiencies include the use of broad analytic comparisons of impacts with natural variability in a population and a lack of clarity in the presentation of the oil spill analysis.

Serious Adverse Impacts to Coastal Resources

The DEIS identifies significant adverse impacts to Southern California coastal resources. In particular, oil spills could result in devastating impacts to the southern sea otter, a federally-listed threatened species. The Commission has objected repeatedly to past lease sales in the northern Santa Maria Basin to protect the sea otter from oil spills. The current lease sale includes 19 blocks that the Commission objected to in 1981 (lease sale 53) and 45 blocks objected to in 1983 (lease sale 73).

The DEIS also identifies serious impacts to coastal wetlands in Southern California due to oil spills. The DEIS states "estuaries in Southern California could be dysfunctional for up to 10 years, virtually eliminating relatively healthy estuaries in the region for the period." Given the importance of the few remaining coastal wetlands in Southern California to migrating birds, endangered species, fish and other biota, and as an educational and open space resource, the potential effect of oil spills on wetlands in Southern California warrants deletion of the 87 blocks.

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II. COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

A. General Comments

Level of Analysis is Too Broad

The usefulness of the DEIS as a decision-making tool is limited by the high level of generality employed. The analysis of a given impact is relatively cursory and based on a large number of sometimes questionable assumptions and unsubstantiated probabilities. We recognize that a more detailed EIS will be developed for each individual lease sale, and there are inherent uncertainties at this stage in the process. However, an accurate assessment of environmental impacts and costs is also critical at the five-year lease program stage when the critical decision of where leasing will occur takes place.

An example of the problem with using a high level of generality is in the cumulative impact case for oil spill impacts on tourism and recreation (p. IV.D-64 of the DEIS). The cumulative impact case hypothesizes that 17 oil spills greater than 7,000 bbl will occur over the 35-year life of the project in the Pacific OCS Region. These hypothesized oil spills range in size from 7,000 bbl to 30,000 bbl (p. IV.D-476). The DEIS concludes that due to oil spills, affected beaches would be closed for approximately one month during clean up operations. Common sense would indicate that a 7,000 bbl oil spill would affect a smaller area and take a shorter time to clean up than a 30,000 bbl oil spill, yet the impacts of these spill sizes are not distinguished from one another.

Nor does the document distinguish the effect of these two spill sizes for the sea otter population. According to the DEIS, both a 7,000 bbl spill and a 30,000 bbl spill would result in the deaths of tens of otters and recovery is expected to take up to three years. Furthermore, the statement that an oil spill would cause the deaths of "tens" of otters or "hundreds" of otters is very general. Is the probable number closer to ten or closer to 100; closer to 100 or closer to 1,000? Given the small population size (about 1,600 animals according to the DEIS p IV.D-88), the wide breadth of the range noted in the DEIS is of limited use.

Conclusions Lacking

The Commission found the DEIS conclusions for the individual impacts lacking. Except in the case where no impact is found, there is little attempt to value the importance or significance of a given impact. Recognizing that these are subjective valuations, such an approach would nevertheless assist the reader in understanding the environmental impact picture.

Lease Sale Stipulations/Mitigation

At a number of places in the DEIS it is stated that it is assumed potential impacts will be addressed through expected lease sale stipulations. This response is inadequate and underlines the need for increased policy direction at the five-year lease program stage.

The Coastal Act (Section 30260) requires environmental impacts of industrial facilities to be mitigated to the maximum extent feasible. An analysis of potential mitigation options is essential to the coastal consistency determination process. The Commission recommends that this analysis be conducted as part of the overall environmental review, through the EIS process. Rather than stating that a future stipulation will address an impact, MMS should identify appropriate mitigation and should evaluate the effectiveness of the mitigation and whether these or other more effective steps could be taken.

Natural Resource Variability As Standard of Comparison

Repeatedly, the DEIS includes the statement that a specific impact on a resource, usually from spilled oil, is not expected to be distinguishable from that resource's natural variability or fluctuations. The implication is that the impact is therefore inconsequential. However, the statement has very little meaning by itself. Additional information is needed to provide a context for the statement. For example, the mortality of a few animals may not be distinguishable from natural variability in a population, but if that animal is endangered or threatened and is undergoing severe population variability (i.e. in decline) due to other threats such as habitat loss, the loss of a few animals could represent a significant concern.

Basis for Oil Spill Assumptions Unclear

The DEIS includes numerous assumptions regarding oil spill probabilities and likely impacts. However, the underlying basis for each assumption is not clearly specified.

For example, why is uniform frequency and spatial distribution of oil spills assumed? If this assumption proves false, the result would be additive and chronic impacts from oil spills, potentially far worse than the impacts described in the DEIS. However, no analysis is presented of potential chronic and additive impacts from oil spills that do not conform to this assumption and instead cause impacts that overlap in space and time. Why is the assumed pipeline oil spill for the Pacific Region 7,000 bbl, but 25,000 bbl in other OCS regions? If this difference is historically based, what factors lead to the belief that the difference will continue in the future? Why in the "high" development case, in which the assumed number of platforms and pipelines associated with the Southern California lease sale is doubled over the base case, do the assumed oil spills stay the same? How were the base and high cases developed; which scenario is more likely; what are the factors that drive the amount of development?

Please respond to these questions and include a clear explanation of all assumptions and the reason behind the assumption.

Cumulative Impact Analysis is Deficient

The DEIS states (p. IV.D-446) that "the cumulative analysis considers impacts to the environment when the proposed action is added to past, present, and reasonably foreseeable future actions or activities." (emphasis added)

This is an accurate description of a cumulative impact analysis. However, with certain exceptions, much of the section on cumulative impacts consists of a listing of the various sources of impacts with little attempt to assess how, when added together, they could affect a particular resource. The cumulative impact analysis should be modified to reflect a true assessment of the additive impact of past, present, and future actions or activities on a resource.

B. Detailed Comments on DEIS

1. Air Quality

The California Coastal Management Program (CCMP) requires the Coastal Commission to assure that new development is consistent with the requirements imposed by local air control districts and the Air Resources Control Board. As noted in the DEIS, the new Clean Air Act transfers authority for regulating the air emissions associated with OCS oil and gas development from MMS to EPA and requires that OCS emissions meet the same requirements as onshore development, which will likely result in the application of local air district rules to OCS projects.

Both Santa Barbara and Ventura Counties are currently non-attainment areas for ozone under the Clean Air Act. The non-attainment status in these counties will require that the companies obtain emissions offsets for any new air emissions from OCS development. The DEIS concludes that there will therefore be no net increase in air emissions as the result of the Southern California lease sale.

However, the DEIS analysis does not consider the full implications of the offset requirements. Given that there is a limited pool of offsets available, the DEIS should include an analysis of the availability of offsets for use as mitigation for the proposed development (base, high, and cumulative cases). In addition, the use of offsets for OCS development would represent a tradeoff, limiting the potential for onshore industrial development, which may be more beneficial economically for the onshore counties. Therefore, the DEIS analysis should include an assessment of the impact of the projected air emissions from the proposed OCS development and its associated use of available emissions offsets, on onshore industrial opportunities and the overall economic growth of the coastal counties, including employment opportunities.

2. Sea Otters

The proposed lease sale could have a potentially devastating effect on the southern sea otter. The Coastal Commission has repeatedly objected to past lease sales in the northern Santa Maria Basin on the basis that leasing in this sensitive area would endanger the future existence of the southern sea otter, which is federally-listed as a threatened species. According to the San Luis Obispo Planning Department, the Santa Maria Basin contains approximately 70% of the sea otter population of California. As noted in the DEIS, sea otters are particularly vulnerable to spilled oil, since they rely on a layer of warm air in their dense underfur for insulation against cold.

Following is a brief synopsis of the Coastal Commission's and others' objections to past Santa Maria Basin leases based on harm to the sea otter:

- o On March 20, 1981, the Commission objected to the leasing of 29 blocks in the northern Santa Maria Basin on the finding that they were within the established range of the southern sea otter (lease sale 53). The Commission found that at least a 12 mile buffer was necessary to protect the sea otter from oil spills. Nineteen of the 87 blocks in the current proposal are among the 29 objected to in 1981.
- o On August 27, 1983, the Commission objected to the leasing of all 45 of the blocks now proposed for leasing in the Santa Maria Basin (lease sale 73). In a Memorandum of Agreement with California's Secretary for Environmental Affairs, DOI stipulated to the deletion of 22 blocks in the northern Santa Maria Basin, to protect the sea otter. (Although the DEIS refers to a Lease Sale stipulation requiring an oil spill contingency plan, stating that it is assumed a similar stipulation would be adopted for this proposal, no mention is made of the stipulation to delete 22 blocks.) Seven of the deleted blocks have reappeared in the current proposed lease sale.
- o In 1986, in response to the Platform Julius proposal (Cities Service) in the northern Santa Maria Basin, the U. S. Fish and Wildlife Service (in a Section 7 consultation under the Endangered Species Act) concluded that the full-field development in the basin would jeopardize the continued existence of the southern sea otter.

The Commission does not believe that circumstances surrounding the sea otter population in California and its vulnerability to spilled oil have changed significantly since the above events. The sea otter translocation program is experimental and cannot be used to justify intensified risks to the sea otter population. Nor do the proposed oil spill contingency planning and sea otter rehabilitation facilities mentioned in the DEIS justify further risk to the threatened sea otter population. The limited effectiveness of oil spill clean-up efforts is well-documented; only a small percentage of oiled otters are retrieved for clean-up, and only a percentage of those retrieved survive.

The DEIS analysis for the impact to sea otters is inadequate. Although the DEIS states that the expected 7,000 bbl spill assumed to occur near the otter range could pose a "serious threat to those otters," and states that a spill occurring near the otter colony could "oil hundreds of animals, resulting in the death of a vast majority of the oiled animals," the conclusion of the section is that oil spills will result in the deaths of tens of otters and the population is expected to recover in three years. This conclusion does not reflect the serious threat previously mentioned.

The expected three year recovery period for the population after an oil spill is based on an assumed rate of population increase of 5% annually. Given that the otter population in California declined or remained stable in the 1970's and early 1980's and in 1990, the population increased by only 2%, what is the justification for assuming an increase of 5% per year?

The DEIS (p. IV.D-87) states that there is no information available regarding the impact of exploratory and development drilling operations and construction activities on sea otters. The DEIS goes on to conclude (p. IV.D-89) that no impacts are expected from these routine operational and construction activities. With no information available on the subject, what is the basis for this conclusion?

3. Wetlands

Given the historic 91% loss of Southern California wetlands, and a continuing threat of decline due to a variety of forces including development and pollution, the potential effect of the proposal on wetlands is very disturbing. The cumulative impact analysis of the impact of oil spills on wetlands states "[e]stuaries in Southern California could be dysfunctional for up to 10 years virtually eliminating relatively healthy estuaries in the region for the period" (p. IV.D-601). This potential impact in and of itself warrants deletion of the 87 blocks.

Furthermore, this statement raises several questions. What is the basis for assuming recovery after 10 years, what is the likelihood that the loss would be permanent? What is the impact of loss of wetlands to endangered species that depend upon wetland habitat for survival such as the clapper rail and belding savannah sparrow? What is the impact of habitat loss on migrating birds that use Southern California wetlands as a rest stop on the Pacific flyway, and fish species, such as the halibut, that use these wetlands as nursery habitat?

On p. IV.D-191, the statement is made that requirements for oil spill response and equipment testing should reduce the chance of an oil spill reaching an estuary and causing impacts. A similar statement is made in the section on intertidal habitat. While the Commission continues to support and require oil spill response capabilities, we acknowledge the limited effectiveness of such equipment in response to past oil spills. Booms to contain oil are generally only effective in calm seas, which would be highly unusual for the Southern California coast. Recovery equipment recovers only 5-15% of spilled oil in the best of circumstances. Therefore, the existence of these capabilities, while necessary, cannot be used to reduce the expected level of adverse impact from an oil spill.

4. Water Supply

On p. IV.D-628, the DEIS states that the overall cumulative impact of the demand for water to support offshore oil development, combined with other uses, is expected to cause "severe stress to water supply." If this impact is mitigable, a description of how mitigation would be accomplished should be included in the EIS. Cogenerated desalination should be considered as a possible mitigation method. The EIS analysis should include an economic analysis of the impact of the demand for water for OCS development on the economy of the area.

5. Commercial Fishing

The DEIS identifies serious impacts to commercial fishing in Santa Barbara Channel and Santa Maria Basin as a result of the proposal. The base case example (low development level) predicts that one or more oil spills are expected to result in high economic losses ranging from 20 to 30 percent and lasting for two seasons, more than 10 percent unemployment of the fixed gear fisherman, and financial losses of 10 to 20 percent of economically dependent businesses in the Santa Barbara area. The cumulative case with 17 large oil spills assumed predicts the same impacts. Common sense indicates that the impacts would be greater from 17 oil spills (cumulative case), than from 2 spills (base case), please explain.

Please identify whether MMS would include stipulations in the lease sales requiring mitigation to offset these adverse impacts, and describe the anticipated mitigation stipulations. If unmitigable, these impacts to commercial fishing provides further justification for deleting the 87 block lease sale.

6. Archaeology

The DEIS analysis of the impacts of the proposal on archeological resources is deficient. While it is stated that there is a potential for the disruption of historic sites due to oil spills, no indication of the potential importance of the historic sites, nor the magnitude of the disruption is given. This section should be modified to include a more meaningful impact analysis, and a description of possible mitigation measures.

7. Oil Spill Containment and Clean Up

In scoping comments dated August 25, 1989, the Commission requested that the DEIS include an analysis of the state of the art oil spill containment and clean up capabilities. The DEIS does not include the requested analysis. Please provide this analysis.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF LONG ISLAND SOUND PROGRAMS

October 29, 1991

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Ms. Debra Purvis
Environmental Projects Coordination Branch
(Mail Stop 4320)
Minerals Management Service
381 Eden Street
Herndon, VA 22070

Dear Ms. Purvis:

Enclosed in accordance with our conversation today is a copy of comments submitted to Thomas Gernhofer, Associate Director for Offshore Minerals Management, Minerals Management Service, regarding the Proposed Comprehensive Outer Continental Shelf Natural Gas and Oil Resource Management Program for Mid-1992 through Mid-1997. These comments reference the Draft Environmental Impact Statement (DEIS) for the OCS program, and should, therefore, be considered as Connecticut's comments on the DEIS.

Please contact me if you have any questions regarding the enclosed letter. Thank you.

Sincerely,

Thomas R. Ouellette

Thomas R. Ouellette
Environmental Analyst

Enclosure

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STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

October 28, 1991

Thomas Gernhofer
Associate Director for Offshore
Minerals Management
Minerals Management Service
1849 C Street, NW., MS 4230
Washington, D.C. 20240

Dear Mr. Gernhofer:

Thank you for the opportunity to comment on the Proposed Comprehensive Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program for Mid-1992 through Mid-1997. As in the earlier development of the Draft Proposed Comprehensive Program, such ongoing contact with interested parties is essential to the wise management of our OCS resources.

The Proposed Comprehensive Program contains a number of refinements which address concerns expressed in Governor Lowell P. Weicker, Jr.'s letter of May 3, 1991 regarding the draft program. However, on behalf of the Governor, I believe certain issues of interest to the State of Connecticut merit your further consideration. The following comments correspond in order to the questions contained in the Notice of Request for Comments.

Connecticut's comments with regard to those elements of the draft program which are unchanged in the current proposal remain as previously stated. In this regard, I fully support limitation of the numbers of sales and acreage available for leasing so that analytical efforts may be directed toward more prospective lease areas. I believe that the configuration of the boundaries of the North Atlantic Planning Area effectively prescribe the limits of resources of immediate concern to Connecticut and the other coastal New England States. For example, those boundaries correspond generally to those demarcating the jurisdiction of the New England Fishery Management Council. In principle, however, the potential benefits which could derive from reducing the size of the planning areas as described in the Decision Documents, including increased responsiveness to concerns of states, municipalities and the general public, would be favorable to Connecticut.

Similarly, I support slowing the pace of leasing to guarantee complete and effective assessment of both mineral resource potential and associated environmental impacts. Although leasing has been deferred in the North Atlantic Planning Area until the year 2000, I also strongly support the additional technical and environmental studies to be conducted in this area under this five year program.

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I urge continued diligence in the evaluation of mineral resource potential and the respective environmental impacts in all planning areas. I specifically support consideration of Alternative VI, which would further eliminate from consideration for leasing blocks located in submarine canyon areas. Of particular interest in Connecticut are the submarine canyons of the Mid-Atlantic Planning Area, the northernmost of which are located less than 100 miles from the mouth of Long Island Sound. As discussed in the Draft Environmental Impact Statement (DEIS), submarine canyons "support a higher abundance, biomass and diversity of large, bottom dwelling animals, including many commercially important species, than adjacent areas on the continental shelf." Connecticut fisherman seek lobster, billfish and tuna within Hudson Canyon and Block Canyon, and trawl for bottom fish in those areas during the winter. While present in the canyons, those species may be particularly vulnerable to the adverse impacts of oil spills and the discharge of drilling muds and cuttings. The level of prudence provided by Alternative VI is of particular significance since the DEIS further indicates that the recoverable mineral resources projected for Alternative VI are comparable to those projected for the proposed Alternative I.

I believe the sensitivity analyses described in the proposed Program, while not specifically measuring development-related risks, offer an objective assessment of environmental conditions in the OCS planning areas. All of the changes which have been incorporated in the analyses will improve their effectiveness. Specifically, I agree with the expansion of the sensitivity coefficient for marine biota and the revised categorization of marine mammals. I also concur with the elimination of sensitivity variation due to latitude on the basis that other environmental factors are more important in predicting the impacts of oil spills.

The validity of the sensitivity analyses are evidenced by the relative rankings of the North Atlantic Planning Area. This planning area falls within Group I for marine habitats, reflecting the environmental importance of Georges Bank fishery habitat. It is important to note that the North Atlantic scores higher or essentially equivalent to both the mean and median values for all planning areas. This substantiates the deferral of the North Atlantic Planning Area from leasing activity. However, I would like to encourage continued research through the Environmental Studies Program to accurately delineate the extent and character of mud/sand habitats so that they may be effectively included in the evaluation of marine habitats.

I urge, as did Governor Weicker in response to the draft program, that MMS avail itself of every opportunity to seek public comment on proposed OCS activities, through informational meetings, workshops and hearings. I am pleased to see that such coordination mechanisms have been included in the Information Acquisition/Evaluation and Planning/Consultation steps in the Area Evaluation and Decision Process (AEDP).

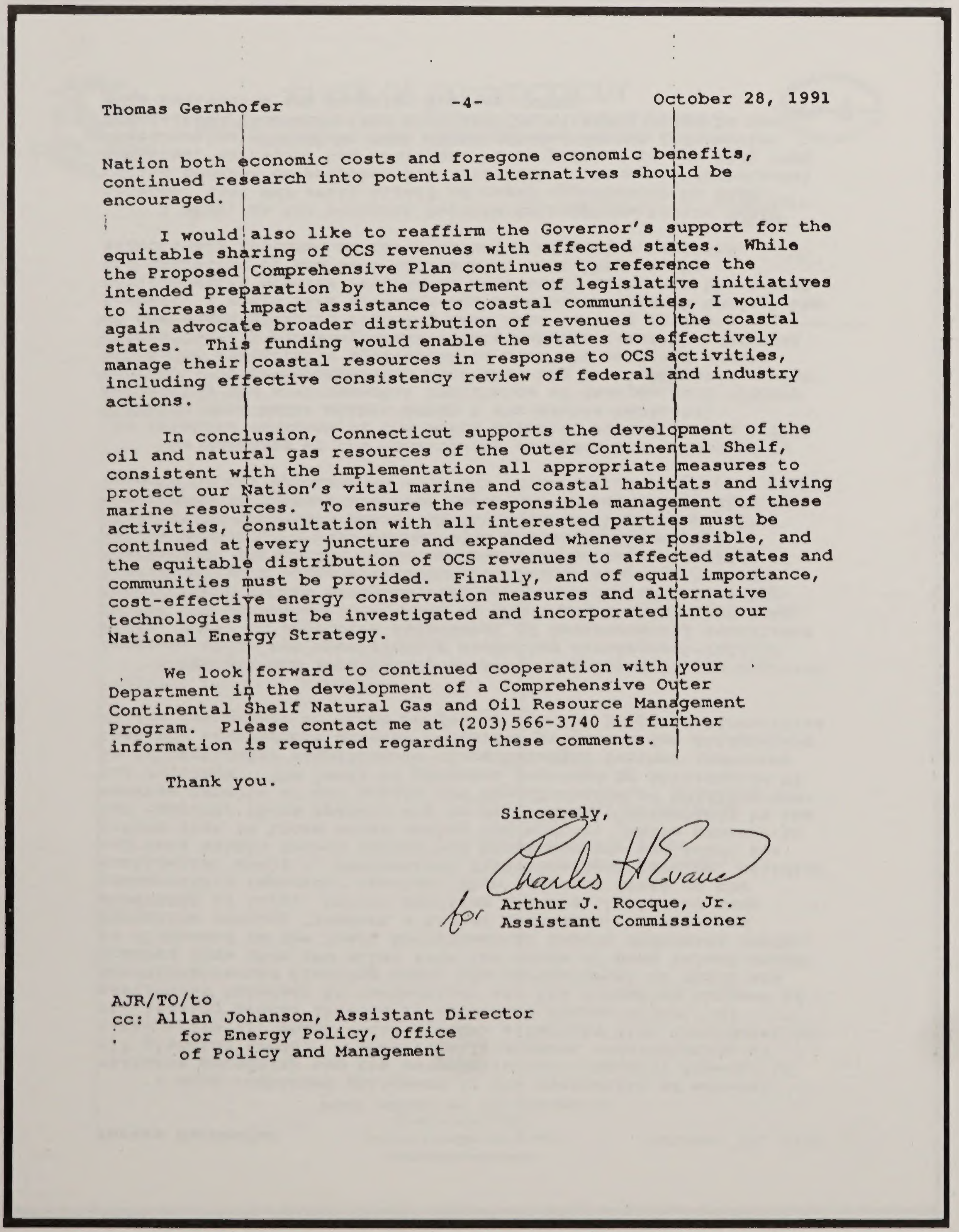
I agree with your present assessment that the concurrent issuance of a proposed Notice of Sale and Draft Environmental Impact Statement may elicit more effective comment from interested parties, particularly from industry. However, it is important that comments received following public review of these documents be used not only to refine the final EIS, as intended, but also to revise the final Notice of Sale, if appropriate.

The proposed procedure for preparation of a lease sale consistency determination (CD) meets, in part, Connecticut's previously expressed concerns. Concurrent issuance of a CD and a final EIS would presumably enable discussion of coastal management issues in the FEIS as Governor Weicker previously recommended; if such discussion is not included in the FEIS, I would reiterate that it should be.

I do not agree with the proposed 90-day review period for the consistency determination prior to issuance of the final Notice of Sale. I believe that a 150-day review period would ensure more effective review. The Decision Documents indicate that under present procedure, a longer time frame for CD review would require its completion prior to that of the FEIS. The Decision Documents fail to explain, however, why establishment of a longer review period is not feasible and why that period should not commence upon the concurrent completion of the CD and the FEIS. A longer time frame would avoid the administrative burden of delaying the final Notice of Sale, as proposed, in the event that additional time is needed for review of the concistency determination.

As described in the program documents, the decision to issue a Call for Information and Nominations is determined by responses to both the Request for Interest and Comments (RFIC) and the Information Base Review (IBR). It is significant that the Proposed Comprehensive Program expands the RFIC to include comments from potentially affected parties as well as industry interests. However, the IBR as proposed provides for substantial consultation with, and solicitation of comments from, the public and other interested parties regarding environmental, geologic and socioeconomic issues. Therefore, retention of the RFIC does not appear to be necessary. I recommend, however, that any consultation mechanisms inherent in the RFIC which are not also included in the Information Base Review, should be incorporated into that review.

Additionally, with regard to the National Energy Strategy, I would like to reaffirm Governor Weicker's comments of May 3, 1991 concerning Connecticut's support for the use of conservation measures, renewable fuels and alternative technologies in the effort to reduce oil consumption and importation. Related to this, I strongly urge the administration to require further improvements in automobile fuel efficiency. Despite MMS's reported demonstration that governmental enforcement of alternatives to OCS oil and gas development would impose on the



Nation both economic costs and foregone economic benefits, continued research into potential alternatives should be encouraged.

I would also like to reaffirm the Governor's support for the equitable sharing of OCS revenues with affected states. While the Proposed Comprehensive Plan continues to reference the intended preparation by the Department of legislative initiatives to increase impact assistance to coastal communities, I would again advocate broader distribution of revenues to the coastal states. This funding would enable the states to effectively manage their coastal resources in response to OCS activities, including effective consistency review of federal and industry actions.

In conclusion, Connecticut supports the development of the oil and natural gas resources of the Outer Continental Shelf, consistent with the implementation all appropriate measures to protect our Nation's vital marine and coastal habitats and living marine resources. To ensure the responsible management of these activities, consultation with all interested parties must be continued at every juncture and expanded whenever possible, and the equitable distribution of OCS revenues to affected states and communities must be provided. Finally, and of equal importance, cost-effective energy conservation measures and alternative technologies must be investigated and incorporated into our National Energy Strategy.

We look forward to continued cooperation with your Department in the development of a Comprehensive Outer Continental Shelf Natural Gas and Oil Resource Management Program. Please contact me at (203)566-3740 if further information is required regarding these comments.

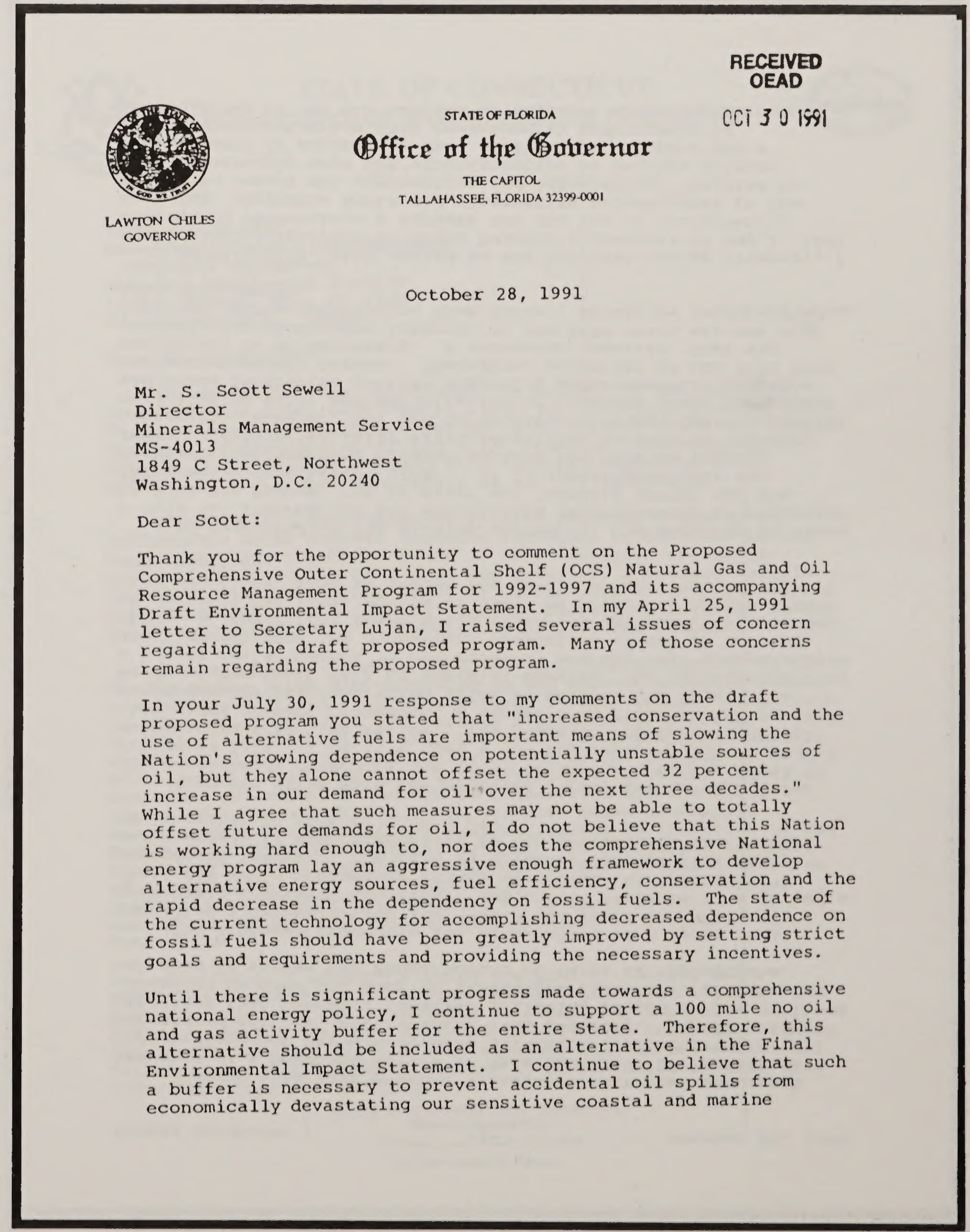
Thank you.

Sincerely,

Charles H Evans

for Arthur J. Rocque, Jr.
Assistant Commissioner

AJR/TO/to
cc: Allan Johanson, Assistant Director
for Energy Policy, Office
of Policy and Management



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STATE OF FLORIDA
Office of the Governor
THE CAPITOL
TALLAHASSEE, FLORIDA 32399-0001

LAWTON CHILES
GOVERNOR

October 28, 1991

Mr. S. Scott Sewell
Director
Minerals Management Service
MS-4013
1849 C Street, Northwest
Washington, D.C. 20240

Dear Scott:

Thank you for the opportunity to comment on the Proposed Comprehensive Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program for 1992-1997 and its accompanying Draft Environmental Impact Statement. In my April 25, 1991 letter to Secretary Lujan, I raised several issues of concern regarding the draft proposed program. Many of those concerns remain regarding the proposed program.

In your July 30, 1991 response to my comments on the draft proposed program you stated that "increased conservation and the use of alternative fuels are important means of slowing the Nation's growing dependence on potentially unstable sources of oil, but they alone cannot offset the expected 32 percent increase in our demand for oil over the next three decades." While I agree that such measures may not be able to totally offset future demands for oil, I do not believe that this Nation is working hard enough to, nor does the comprehensive National energy program lay an aggressive enough framework to develop alternative energy sources, fuel efficiency, conservation and the rapid decrease in the dependency on fossil fuels. The state of the current technology for accomplishing decreased dependence on fossil fuels should have been greatly improved by setting strict goals and requirements and providing the necessary incentives.

Until there is significant progress made towards a comprehensive national energy policy, I continue to support a 100 mile no oil and gas activity buffer for the entire State. Therefore, this alternative should be included as an alternative in the Final Environmental Impact Statement. I continue to believe that such a buffer is necessary to prevent accidental oil spills from economically devastating our sensitive coastal and marine resources. The oil spill response stipulations which you refer to in your July 30 response, requires "state-of-the-art spill containment and clean-up equipment" be positioned in areas that ensure a timely response in the event of an accident. The "state-of-the-art" for spill containment and clean-up equipment is clearly lacking.

Absent the analyses for a 100 mile buffer for Florida, I will continue to support the alternative which includes no additional leasing over the program period in the eastern Gulf of Mexico. Detailed discussions of environmental studies included in the State's comments will substantiate the need for such a delay.

Enclosed are the State's comments which address technical aspects of the proposed program and the DEIS. In addition, copies of written comments received to date are enclosed. Please consider all of these comments in the development of the final program.

Thank you again for the opportunity to comment. Should you have questions regarding these comments, please call Ms. Debby Tucker of my staff at (904) 488-5551. We look forward to continue working with you on the development of the final program and the final environmental impact statement.

With kind regards, I am

Sincerely,

Lawton Chiles

LAWTON CHILES

LC/ddt

Enclosures

State of Florida
Comments on the Proposed Comprehensive Outer Continental Shelf Natural Gas and Oil Resource Management Program, 1992-1997
and
the Draft Environmental Impact Statement

Planning Area Analyses

The size, timing and location for specific lease sales separates the Eastern Gulf of Mexico from the Central and Western in the proposed program. Specific discussions of issues also includes the separation of the areas. However, the Draft Environmental Impact State (DEIS) for the program includes impact analyses for the Gulf of Mexico in general.

Although it is not necessarily appropriate to make a distinction between these three individual planning areas in some cases in the DEIS (i.e., the physical oceanography of the Gulf of Mexico is just that and each planning areas oceanography affects the whole system), it is imperative that individual differences be discussed and that the Eastern Gulf be analyzed as a separate planning area when determining environmental impacts and benefits. Clearly factors such as the level of OCS activity and development, significant differences in coastal and offshore habitats, and socioeconomic structures mandate that the final EIS include complete analyses of the proposal and the alternatives on the eastern Gulf.

In fact, the impacts associated with OCS activities in the Eastern Gulf are so masked by impacts in both the Central and Western Gulf that removal of any or all of the Eastern Gulf does not change the impact analyses. It is our contention that impacts from OCS activities in the Eastern Gulf maybe more clearly defined and quantified because of the frontier nature of the area.

Area Evaluation and Decision Process (AEDP)

While we again commend you on the development of a process which attempts to address concerns which have plagued previous 5-year programs, we remain concerned on how effectively this will be accomplished. We expected the proposed program to be more explicit in explaining how the State's and public's views and recommendations will be accommodated by the MMS.

One of the objectives of the process is to enhance many parties opportunities to provide input into decisions, however, how successful MMS will be in analyzing and using that input remains to be seen. The goal of the AEDP cannot be simply to gather and exchange information and ignore it where the MMS feels it does not assist in the mandate to continue leasing - but to carefully weigh that information in making decisions. Other than an opportunity to provide input into the process, it is still unclear as to how much "public participation" will influence the final decisions.

In discussion of the AEDP phrases such as "some degree of judgement", "significant impacts", "adequacy" and "relevant to the issues" are often used. These are very subjective and may again vary greatly depending on the area in which OCS operations are being analyzed. Although some attempt has been made to define adequate information through identification of statutes under which the MMS will determine sufficiency, it is still necessary to define these types of descriptive phrases early in the process.

Specific issues and concerns, and relevant information and the ability to obtain necessary information to address these may vary tremendously among planning areas. Therefore, it is imperative that the process allow for such differences. Early identification of issues and concerns must be made knowing exactly what area is to be offered for lease (e.g., which of the 250 blocks in the Eastern Gulf Planning area will be offered determined from the Request for Interest and Comments). There is a clear need to involve regional scientific expertise in assisting what data is critical or actually needed to address issues, what data is currently available to evaluate and answer those concerns and what data is lacking and the timeframes necessary to obtain that information.

The AEDP should not be used to address only the specific decision point at hand. It must be used to determine information needs of the future so that timely information gathering and analyses can occur.

Environmental Studies

In June of 1990 the President directed the Secretary of the Interior to, among other things, improve the information needed to make decisions on OCS development. The National Research Council (NRC) in its reports on the Adequacy of Information for OCS Oil and Gas Decisions for Florida, California and the Georges Bank, as well as, the Assessment of the U.S. OCS Environmental Studies Program, I. Physical Oceanography noted deficiencies in information and procedures to collect information required under section 20 of the Outer Continental Shelf Lands Act, as amended.

Information deficiencies can be found throughout the Proposed Program Decision Document and the Draft Environmental Impact Statement. Although the AEDP appears to allow for the delay or an indefinite stop in the leasing process should data be determined to be inadequate, there are still many unanswered questions regarding the determinations to be made, who will actually make them and how the MMS will assure that information is gathered in a timely manner.

For example, under section 18(a)(2)(G) of the OCS lands Act, as amended, the Secretary is required to consider the relative productivity and environmental sensitivity of the various oil and gas bearing physiographic regions of the OCS as one factor in determining the timing and location of potential lease offerings for the new 5-Year OCS program. Although the methods of considering productivity of the various regions has been upheld by the courts and an effort was made to update this information for the proposed program, one has only to look at the 1990 and 1991 studies of the comparison of marine productivity among OCS planning areas to see that often the confidence level of information available has been determined to be poor to moderate.

This is a basic program analysis which is required by law. Does the analysis of productivity for the program indicate how adequacy of information for program decisions will be determined in the future?

The State has long argued that the Environmental Studies Program should be developed so that studies information is available in a timely fashion for OCS decision making. While some progress towards this goal has been made in recent years, there remains concern that necessary information is not being gathered in a timely manner. Part of this problem is inherent in the funding level and procurement process for the studies program.

The NRC report of the Presidential Task Force on the Adequacy of ENvironmental Information for OCS Oil and Gas Decisions: Florida and California clearly identified areas of study for which information was lacking. In addition, the NRC assessments of the ESP continues to defined areas where additional information is needed to adequately assess the impacts of OCS oil and gas operations.

With these assessments and use of the AEDP, regional information needs should be made and tailored to the specific decision points for the 5-Year Program. During the FY '92 Regional Studies Plan development process, the State nominated studies which are necessary for OCS activity analyses in the Eastern Gulf of Mexico. Those studies have not, nor are likely to be funded in the near future. Yet much of the information is needed now for the program analyses.

Stipulations

It is imperative that stipulations as presently described in the documents are included in the final program. The AEDP process should then be used to update stipulations as necessary and determine if additional stipulations are needed.

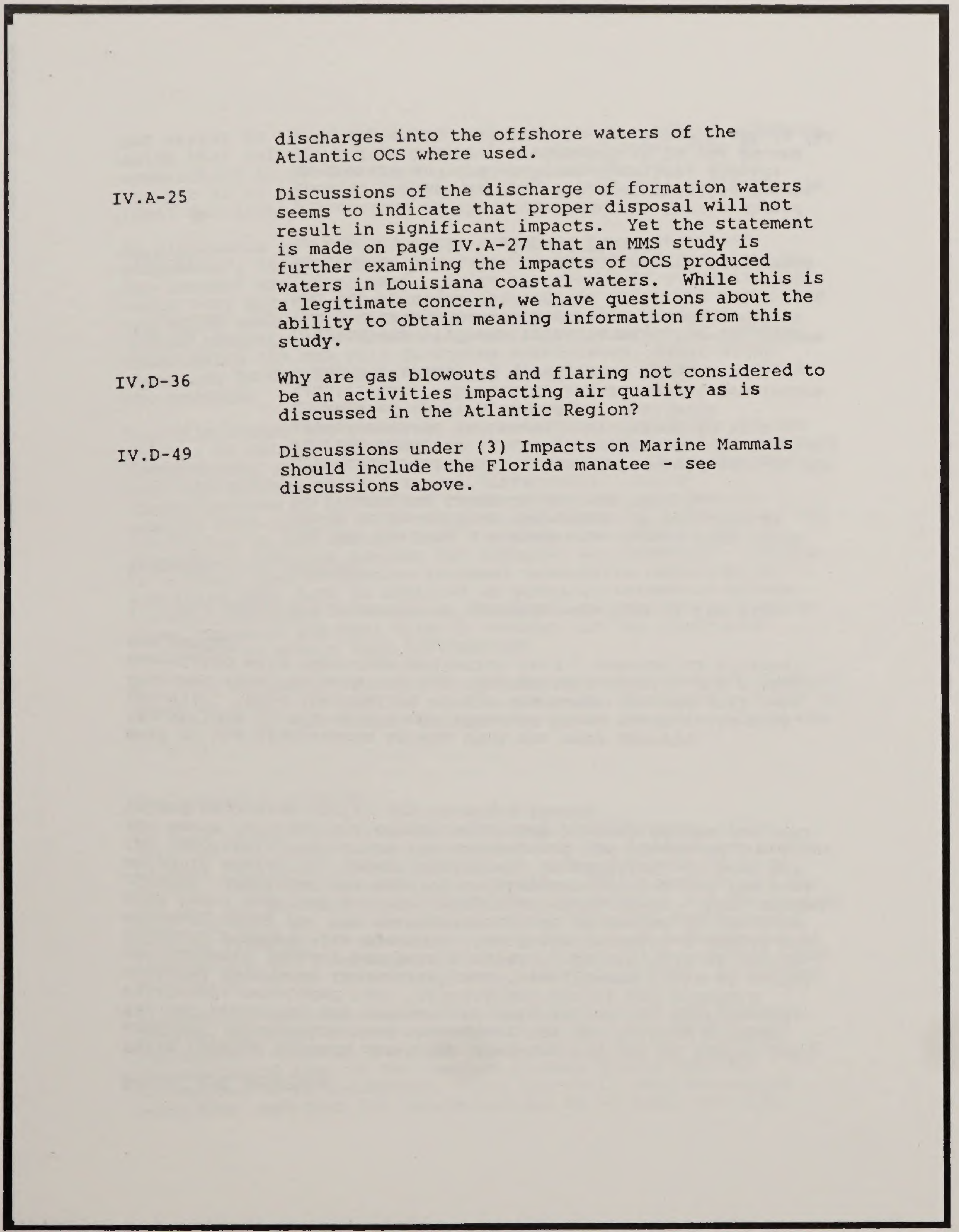
Social and Economic

There remains concern about the adequacy and use of social and economic information used throughout the OCS leasing program. The NRC report on the adequacy of information for Florida and California concluded that "traditional social and economic analyses have been inadequate" and "significant types of social and economic impacts had been ignored." At the Gulf of Mexico Regional Studies Plan Workshop, the State nominate a social and economic study for the northeastern Gulf of Mexico in the same area where most OCS activity is projected to occur. That study clearly identified the type of information lacking for the area which is needed for impact analyses. In addition, we have had the opportunity to review the comments of the states of Louisiana and North Carolina and concur with them on many of the concerns raised regarding social and economic issues.

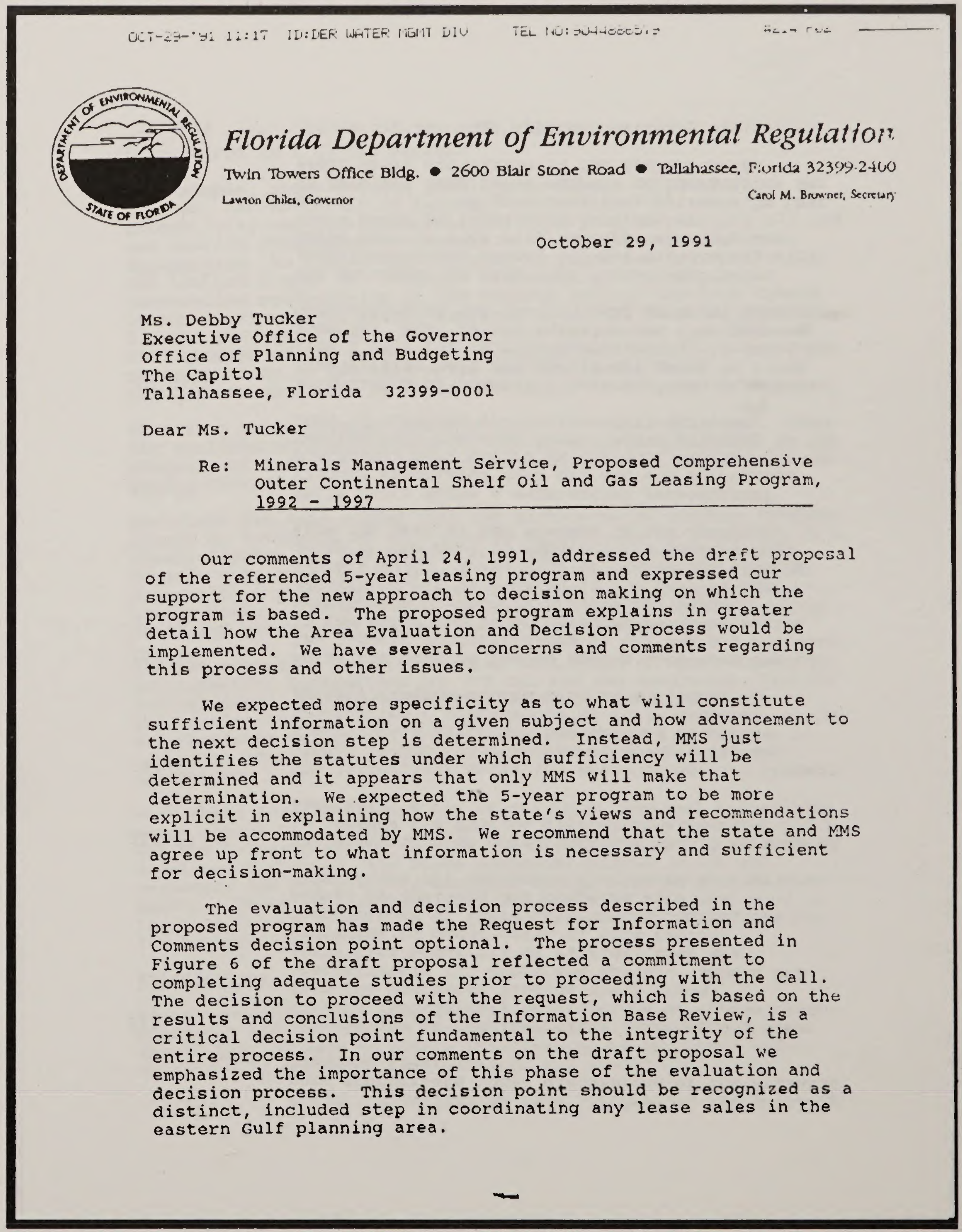
Most of the discussions in the DEIS are very generic. Assumptions of oil spills and affected areas needs to be more specific. More information on the low level chronic pollution expected from OCS activity and the specific effects and problems associated with this type pollution (e.g., sub-lethal effects) are needed.

Included below are comments on specific sections of the DEIS.

Page No.	Comment
III-9	(2) Air Quality - discussions should list those areas designated as Prevention of Significant Deterioration in Louisiana and Florida.
III-9	Discussions of "Marine Mammals" should include the Florida manatee. Although impacts to the manatee are assumed to be remote, any impact to this endangered species should be considered significant. Therefore, regardless of how remote - impacts should be discussed.
III-10	Discussions of Terrestrial Mammals should include the Choctawatchee beach mouse - found in Walton and Bay Counties of Florida.
III-17	Nesting of green sea turtles has been documented in the Panhandle region of Florida.
	Discussions of the Loggerhead sea Turtle should include the Archie Carr National Wildlife Refuge in Brevard and Indian River Counties, Florida. The Refuge has been documented to be the second most important nesting site for loggerheads in the world. Specifics of this information are probably more appropriate under discussions of the Atlantic Planning Area.
III-22	Discussions of the low-relief live bottoms off Florida include only descriptions of communities from the southwest Florida shelf (from approximately Ft. Myers and south). Should OCS activities occur off of Florida, they are projected to occur north of this region. Descriptions of those live-bottom communities should be included and compared with the communities off southwest Florida as appropriate.
III-25	The discussion of coral habitats should be updated to include the Florida Keys National Marine Sanctuary.
III-28	The discussions under (h) Areas of Special Concern should include discussions of Rookery Bay and Apalachicola River and Bay Nations Estuarine Sanctuaries. Discussions of EPA's National Estuary Program should also be included.
III-33	While the Gulf of Mexico Region does have one of the highest concentrations of oil and gas activity in the world and is accompanied by an extensive development of onshore service and support facilities, it is located in the Central and Western Gulf. These type of statements clearly point to the need to separate the Eastern Gulf from the Central and Western in the analyses.
III-38	While there maybe a substantial recreational fishery associated with oil and gas production platforms, most occurs in the Gulf outside the Eastern Gulf Planning Area. Again pointing to the need to separate the eastern Gulf analyses.
IV.A-11	Discussions of community recovery from pipelines transversing hard bottoms is estimated to range from 1 year for kelp to approximately 10 years for mussels. What is the estimate for live bottom communities of the Eastern Gulf or South Atlantic?
IV.A-15	The statement is made that "total employment requirements may exceed 200 per exploratory rig. Labor sources will vary but approximately one third would be local hire in frontier areas......." We questions this estimate in that we have not seen these numbers of local hires for exploratory activities in the Eastern Gulf.
IV.A-19	Please explain why "typical" drilling-rig



	discharges into the offshore waters of the Atlantic OCS where used.
IV.A-25	Discussions of the discharge of formation waters seems to indicate that proper disposal will not result in significant impacts. Yet the statement is made on page IV.A-27 that an MMS study is further examining the impacts of OCS produced waters in Louisiana coastal waters. While this is a legitimate concern, we have questions about the ability to obtain meaning information from this study.
IV.D-36	Why are gas blowouts and flaring not considered to be an activities impacting air quality as is discussed in the Atlantic Region?
IV.D-49	Discussions under (3) Impacts on Marine Mammals should include the Florida manatee - see discussions above.



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Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400
Lawton Chiles, Governor
Carol M. Browner, Secretary

October 29, 1991

Ms. Debby Tucker
Executive Office of the Governor
Office of Planning and Budgeting
The Capitol
Tallahassee, Florida 32399-0001

Dear Ms. Tucker

Re: Minerals Management Service, Proposed Comprehensive Outer Continental Shelf Oil and Gas Leasing Program, 1992 - 1997

Our comments of April 24, 1991, addressed the draft proposal of the referenced 5-year leasing program and expressed our support for the new approach to decision making on which the program is based. The proposed program explains in greater detail how the Area Evaluation and Decision Process would be implemented. We have several concerns and comments regarding this process and other issues.

We expected more specificity as to what will constitute sufficient information on a given subject and how advancement to the next decision step is determined. Instead, MMS just identifies the statutes under which sufficiency will be determined and it appears that only MMS will make that determination. We expected the 5-year program to be more explicit in explaining how the state's views and recommendations will be accommodated by MMS. We recommend that the state and MMS agree up front to what information is necessary and sufficient for decision-making.

The evaluation and decision process described in the proposed program has made the Request for Information and Comments decision point optional. The process presented in Figure 6 of the draft proposal reflected a commitment to completing adequate studies prior to proceeding with the Call. The decision to proceed with the request, which is based on the results and conclusions of the Information Base Review, is a critical decision point fundamental to the integrity of the entire process. In our comments on the draft proposal we emphasized the importance of this phase of the evaluation and decision process. This decision point should be recognized as a distinct, included step in coordinating any lease sales in the eastern Gulf planning area.

In our previous comments on the draft proposal we explained the necessity for two formal CZMA federal consistency determination reviews. The Area Evaluation and Decision Process does not incorporate this recommendation. The state will provide comments regarding the consistency of proposed lease sales at each review stage and will conduct formal consistency reviews at the draft Environmental Impact Statement (EIS)/Proposed Notice of Sale and at the final EIS/Notice of Sale.

We are disappointed that our previous recommendations did not result in changes to the boundary of the Gulf of Mexico Eastern Planning Area. We explained the state's objection to leasing and development activities within 100 miles of our coast. Since the program still shows the eligible sale boundary to include this area, MMS can expect the state to object to the planned lease sales and to disagree with the consistency of these actions with Florida's Coastal Management Program.

The draft Environmental Impact Statement for the 5-year program is very general but does provide a comprehensive overview of the issues of concern. We feel it is inappropriate to present information, data and impacts conclusions for the Gulf as a whole rather then addressing the three planning areas separately. The eastern Gulf planning area is distinctly different from the central and western areas. Consideration of impacts and alternatives should be done separately for the eastern area.

It is unclear why Table IV.D.1.a-4 assumes that no oil spills will occur for the proposed action in the eastern Gulf when Table a-5 indicates that there is a probability that one or more spills of 1000 barrels or greater will occur. The proposed program projects the development and transportation of significant volumes of oil. Some of the areas proposed for leasing are very close to state waters. The base case assumptions on which the program's impact analyses are based should not be minimized.

We have concerns for the water quality impacts of formation waters with which we have had no direct experience. At this point, we cannot assume that the program's impact from these discharges is insignificant as suggested by the draft EIS. The state will be participating in the review and amendment of EPA's general NPDES permit applicable to offshore oil and gas drilling activities which will address formation waters. During the development of that permit, we expect to make recommendations regarding appropriate measures to minimize adverse impacts as needed.

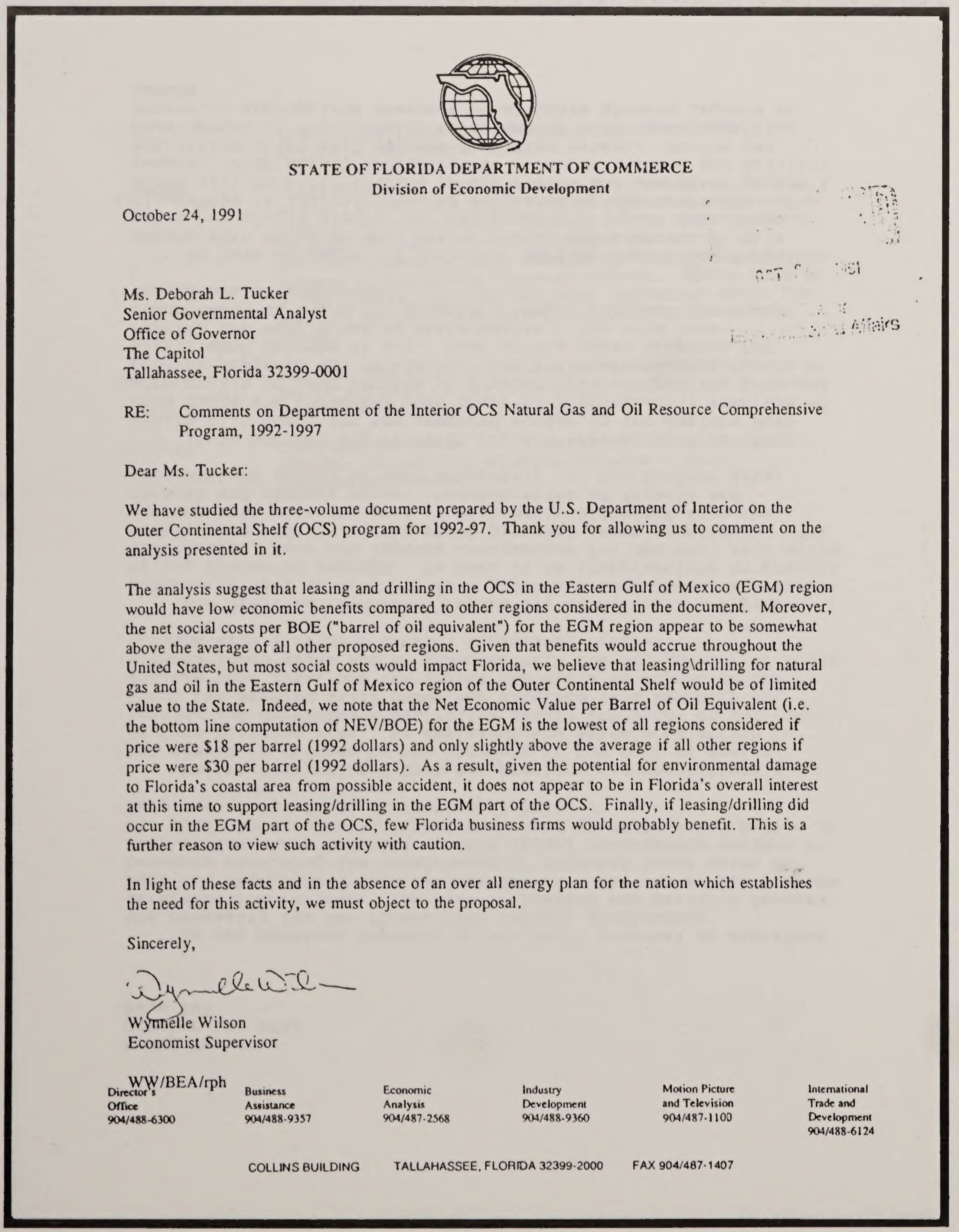
We strongly support the inclusion of the lease sale stipulations used in past sales, particularly the biological stipulation. We are prepared to revisit any stipulations or guidelines developed previously which may need to be updated.

We appreciate the opportunity to provide these comments. If there are any questions regarding our recommendations, please contact Lynn Griffin at 488-0130.

Sincerely,

Mark Latch, Director
Division of Water Management

ML/LG:js
c: Carol Browner
Robert Kriegel
Richard Garrity
Phil Edwards



STATE OF FLORIDA DEPARTMENT OF COMMERCE
Division of Economic Development

October 24, 1991

Ms. Deborah L. Tucker
Senior Governmental Analyst
Office of Governor
The Capitol
Tallahassee, Florida 32399-0001

RE: Comments on Department of the Interior OCS Natural Gas and Oil Resource Comprehensive Program, 1992-1997

Dear Ms. Tucker:

We have studied the three-volume document prepared by the U.S. Department of Interior on the Outer Continental Shelf (OCS) program for 1992-97. Thank you for allowing us to comment on the analysis presented in it.

The analysis suggest that leasing and drilling in the OCS in the Eastern Gulf of Mexico (EGM) region would have low economic benefits compared to other regions considered in the document. Moreover, the net social costs per BOE ("barrel of oil equivalent") for the EGM region appear to be somewhat above the average of all other proposed regions. Given that benefits would accrue throughout the United States, but most social costs would impact Florida, we believe that leasing\drilling for natural gas and oil in the Eastern Gulf of Mexico region of the Outer Continental Shelf would be of limited value to the State. Indeed, we note that the Net Economic Value per Barrel of Oil Equivalent (i.e. the bottom line computation of NEV/BOE) for the EGM is the lowest of all regions considered if price were $18 per barrel (1992 dollars) and only slightly above the average if all other regions if price were $30 per barrel (1992 dollars). As a result, given the potential for environmental damage to Florida's coastal area from possible accident, it does not appear to be in Florida's overall interest at this time to support leasing/drilling in the EGM part of the OCS. Finally, if leasing/drilling did occur in the EGM part of the OCS, few Florida business firms would probably benefit. This is a further reason to view such activity with caution.

In light of these facts and in the absence of an over all energy plan for the nation which establishes the need for this activity, we must object to the proposal.

Sincerely,

Wynnelle Wilson
Economist Supervisor

WW/BEA/rph

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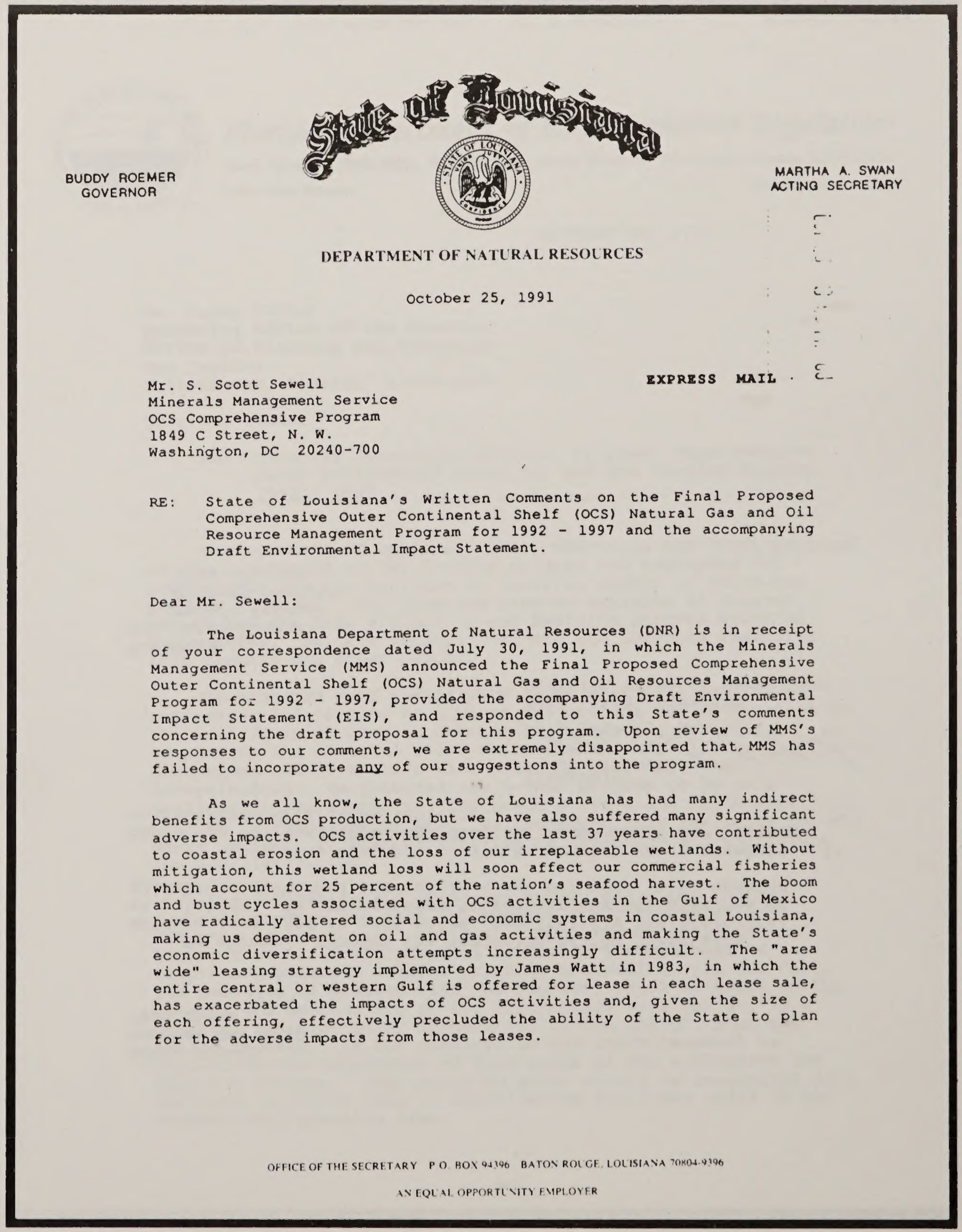

State of Louisiana

BUDDY ROEMER
GOVERNOR

MARTHA A. SWAN
ACTING SECRETARY

DEPARTMENT OF NATURAL RESOURCES

October 25, 1991

EXPRESS MAIL

Mr. S. Scott Sewell
Minerals Management Service
OCS Comprehensive Program
1849 C Street, N. W.
Washington, DC 20240-700

RE: State of Louisiana's Written Comments on the Final Proposed Comprehensive Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program for 1992 - 1997 and the accompanying Draft Environmental Impact Statement.

Dear Mr. Sewell:

The Louisiana Department of Natural Resources (DNR) is in receipt of your correspondence dated July 30, 1991, in which the Minerals Management Service (MMS) announced the Final Proposed Comprehensive Outer Continental Shelf (OCS) Natural Gas and Oil Resources Management Program for 1992 - 1997, provided the accompanying Draft Environmental Impact Statement (EIS), and responded to this State's comments concerning the draft proposal for this program. Upon review of MMS's responses to our comments, we are extremely disappointed that MMS has failed to incorporate any of our suggestions into the program.

As we all know, the State of Louisiana has had many indirect benefits from OCS production, but we have also suffered many significant adverse impacts. OCS activities over the last 37 years have contributed to coastal erosion and the loss of our irreplaceable wetlands. Without mitigation, this wetland loss will soon affect our commercial fisheries which account for 25 percent of the nation's seafood harvest. The boom and bust cycles associated with OCS activities in the Gulf of Mexico have radically altered social and economic systems in coastal Louisiana, making us dependent on oil and gas activities and making the State's economic diversification attempts increasingly difficult. The "area wide" leasing strategy implemented by James Watt in 1983, in which the entire central or western Gulf is offered for lease in each lease sale, has exacerbated the impacts of OCS activities and, given the size of each offering, effectively precluded the ability of the State to plan for the adverse impacts from those leases.

OFFICE OF THE SECRETARY P.O. BOX 94396 BATON ROUGE, LOUISIANA 70804-9396
AN EQUAL OPPORTUNITY EMPLOYER

In June of 1990, President Bush, in the same statement placing a moratorium on the east and west coasts, directed the Secretary of Interior to make changes in the federal leasing policy. The Secretary was directed to: 1) collect the information necessary to determine the effects of OCS development including conducting the studies recommended by the National Academy of Sciences, 2) more carefully select the areas offered for lease, and 3) prepare a legislative initiative to give coastal areas directly affected by OCS activities a greater share of the financial benefits of development and a greater voice in decision making. In spite of this directive, the professed federal commitment to zero wetland loss from federal projects and the demonstrated adverse impacts to the State of Louisiana, the Secretary of Interior has initiated no mitigation efforts for OCS related oil and gas development.

In addition to the comments DNR submitted at the public hearing, held on September 11, 1991 in New Orleans, La., we offer the following in response to the opportunity afforded to provide written comments on the proposed leasing program:

1) Attachment No. 1 - Area-wide Leasing Impacts to Bid Prices

2) Attachment No. 2 - Adverse Socioeconomic Impacts

3) Attachment No. 3 - Adverse Impacts to Wetlands

We also note that the proposed 5-year leasing program has not included provisions for a Federal Consistency Determination and state review. As the record for the public hearing in New Orleans will reflect, we specifically requested MMS to document its contention (as evidenced in its response to comments provided in the letter of April 26, 1991, from the Secretary of the Department of Natural Resources of Louisiana on the Draft Proposed Program) that such a determination is not required under 16 USC 1456(c)(1) as amended by the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990. To this date, MMS has not complied with the request. Accordingly, MMS will need to provide this Department with a Federal Consistency Determination for its review and approval.

The State of Louisiana plays the leading role in supplying the nation with energy resources. Without the voluntary participation of Louisiana in the development and operation of the Outer Continental Shelf Oil and Gas Leasing Program, the nation would be significantly more dependent on energy imports and U.S. energy prices would be much less stable. In this regard, the State of Louisiana is wholeheartedly committed to continued oil and gas development in the OCS. However, MMS and the federal government must take into account the concerns raised in our comments to ensure that Louisiana is ecologically and socioeconomically able to support such development and its necessary infrastructure.

The Department appreciates the opportunity to comment on this proposal and will continue to track future development of the MMS leasing program.

Sincerely,

Martha A. Swan

Martha A. Swan
Acting Secretary

MAS/vsa

Attachments (3): as Stated

ATTACHMENT #2

ADVERSE SOCIOECONOMIC IMPACTS

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GENERAL COMMENTS

I. The draft five year plan has not been submitted for review for consistency with the federally approved Louisiana Coastal Resources Program. It will be far easier to work out issues of consistency with the provisions of the Federally approved Louisiana Coastal Resource Program while the proposal is in draft form than it will be after MMS has produced a "final" environmental impact statement!

II. The five year plan shows no evidence of even attempting to comply with the President's (6/27/90) directives to the Secretary of Interior to take three actions:

1. "Improve the information needed to make decisions on OCS development"

The National Research Council (1989; 1991) noted the deficiencies of Minerals Management Service's information collection procedure to collect the information required under section 20 of the Outer Continental Shelf Lands Act Amendments (OCSLAA) of 1978. These information deficiencies are evident throughout the draft environmental impacts statement and the Secretarial Issue Document supporting the proposed five year leasing program. Neither the Draft environmental impact statement (EIS) nor the Secretarial Issue Document (SID) for the proposed five year plan address how this deficiency will be remedied.

2. "Target proposed lease sale areas in future OCS five-year plans to give highest priority to areas with high resource potential and low environmental risk. This will result in offering much smaller and more carefully selected blocks of tracts." (emphasis added)

This five year plan proposes to continue with area wide leasing in spite of 1) the Presidential directive; 2) the continuing opposition of the State since 1981, when area wide leasing was first considered; and 3) the reduction in value of the OCS lands caused by this strategy: including a) sharp declines in bonus bids per-acre since the inception of area wide leasing, and b) the resulting lowest per-acre bids in almost two decades in the most recent sale in the Gulf (less than $78 per-acre in sale 135).

3. "Prepare a legislative initiative that will provide coastal communities directly affected by OCS development with a greater share of the financial benefits of new development and with a larger voice in decision making" (emphasis added).

Neither the Department of Interior nor Minerals Management Service has indicated in any way how this directive will be implemented.

DECISION DOCUMENTS

The Secretarial Issue Document and the accompanying appendices for the proposed five year plan are fatally flawed and systematically circumvent the requirements under the OCSLAA in a number of ways:

First, it was impossible for the State to assess and comment fully on the proposal at the hearing in New Orleans on September 11, 1991 because the information necessary for the full assessment has been omitted from the proposal. The two appendices (7 and 8) which support the analysis in the Secretarial Issue

Document (all contained in the "decision documents" proposal volume, July 1991) rely almost entirely on two citations (A. T. Kearney 1991) and (ICF 1991), see for example pages 8-16, 8-17, 8-18, 8-20, 8-21, 8-22, 8-23, etc. The reference section for these documents do not list these references, and they are not listed in standard bibliographic sources, and data bases.

Thus, to understand how the errors contained in the draft documents supporting the proposed five year plan were made the State had to also review Kearney (1991) and ICF (1991), which have now been made available by MMS. Even this review did not clear up some of the questions since the details of how some of the data were "estimated" is not contained in these documents either.

Second, even though the documentation is incomplete, it is still possible to identify that the calculation of "social costs" (as presented in appendix 8 of the "decision documents" volume) for the proposed five year plan grossly underestimates the real impacts of OCS activity, and completely fails to consider most of the documented social, economic, and environmental impacts that have already occurred as a direct result of OCS activities. These are impacts which the state has repeatedly pointed out to MMS, most recently in the supplemental guideline review which the State provided to MMS (Department of Natural Resources 1991). The effects of the boom and bust associated with OCS development, and the well documented manner in which this type of cyclical development impacts the affected social and economic systems is not even addressed in these documents. Although appendix 7 acknowledges albeit in a cursory fashion that the world oil market has been very volatile in the past, and briefly discusses the consequences of this volatility on the profit margin associated with OCS production (and hence on the revenue generated for federal coffers), nowhere are the inherent adverse impacts to regions affected by that volatility even acknowledged, much less analyzed. The out-migration from coastal parishes (evident with the 1990 census data), the business failures, and the unemployment and under-employment associated with the recent boom and bust in coastal Louisiana are not considered, much less weighed in the analysis. In a similar fashion the alteration of the social, economic, and physical environment that accompanies boom/bust development, the generation of excess facilities, the alteration of human skills and capabilities in order to support a dominant primary industry, and the resulting reduced adaptability of the coastal region are also ignored.

In terms of "costs," the SID admits (p. 27): "[t]he concept of net social value [which is directly derived from "social costs"] is limited, however, to environmental and socioeconomic effects that are judged to be monetarily quantifiable." There are "other such effects which are not less important but do not lend themselves to quantification" which are not explicitly considered in the document provided for the Secretary's decision. This limitation leads to a severe truncation of the resulting analysis to the point that it becomes unusable. If we are to believe the decision documents, then the "marine, coastal and human environments" which the Secretary of Interior is required to consider under the OCSLAA of 1978 are comprised entirely of "Spill Avoidance," "Infrastructure," "Preemption and Gear Loss," "Air Quality," "Water Quality," "Commercial Fisheries," "Wildlife," "Subsistence," "Legal," "Administration and Research," "Lost Oil," "Wetlands," "Property Value," "Spill Cleanup and Control," and "Recreation and Tourism" (see pages 8-13 to 8-15 in appendix 8). These are the only elements considered to incur costs under the SID social cost analysis.

There are a number of reasons that this myopic view of the world emerges from MMS's analysis, 1) The issue is not so much what is "potentially quantifiable" as MMS maintains, but rather what is quantified and readily available to MMS. The dearth of data concerning the impacts of OCS activities is a direct result of the failure of the agency to fulfill its obligation under the OCSLAA of 1978, which require that subsequent to leasing of an area or region the secretary (of Interior):

> shall monitor the human, marine, and coastal environments of such area or region in an manner designed to provide time-series and data trend information which can be used for comparison with any previously collected data for the purpose of identifying any significant changes in the quality and productivity of such environments, for establishing trends in the areas studied and monitored, and for designing experiments to identify the causes of such changes.

It is precisely this failure of the Department of Interior to collect data, that led to the Presidential moratorium for areas of the east and west coast which have not yet even been leased. The fact of the matter is that leasing in the Gulf has occurred at least annually since 1978, but this subsequent data collection has simply not been done. The Gulf, where over 95% of all OCS production in the U.S. has occurred, has received less than 15% of the available MMS studies funds, and a small fraction of that for data collection concerning the human environment (see Minerals Management Service 1989). Thus, **because** MMS has not fulfilled its charge under the OCSLAA, the data available to MMS to assess the costs of OCS activities is not available, resulting in completely unrealistic assessments of the impacts of OCS activities, and ridiculously inflated assessments (see below) of the "net social value" of proposed activities.

2) The agency (as has been noted by the National Research Council 1989; 1991) has an extremely impoverished definition of the human environment. The human environment for MMS's analysis consists of "Infrastructure," "Preemption and Gear Loss," "Commercial Fisheries," "Subsistence," "Legal," "Administration and Research," "Property Value," and "Recreation and Tourism." This strange view of human culture and social and economic systems is completely indefensible, and (deliberately or accidentally) misses the majority of costs to the human environment associated with OCS activities.

3) The most blatant example of how absurd this view can become is evident in the discussion of "infrastructure costs" presented in appendix 8, and amplified

(slightly) in Kearney 1991. Infrastructure is never clearly defined, but the definition (as it is used in Kearney 1991 and appendix 8 supporting the decision documents) can be derived from the way it is calculated. The calculation of community infrastructure costs are derived from data available from the Socioeconomic Monitoring Program in California, and the "infrastructure costs" for production, for example, are calculated on the basis of one "project," a platform which started production in "spring 1987," and the costs are calculated on the basis of "estimates" of "the paid, negotiated, and settled community infrastructure costs for 1987". Thus, by inference, "infrastructure" consists of whatever it was that could be demonstrated to have lost monies as a result of the production from this one project, and furthermore, were paid, negotiated, and settled during the portion of 1987 when the project started. What these settlements were for we are not told, but we are told that they were estimated to be about $108,000.

To further eliminate the possibility that some of the real impacts of OCS activities might be captured in the analysis in some way, Kearney (1991) further truncates the analysis by excluding any activities which are potentially funded by the NOAA Coastal Energy Impact Program, **even though this program (as noted by Kearney (1991, p. 5-5)) currently is not funded**. Interestingly enough **this** program did fund projects in Louisiana which examined the impacts of OCS activities (e.g. Stallings et. al. 1977).

Support of this method of estimating "infrastructure costs" by Kearney (1991) on the basis that the Socioeconomic Monitoring Program data are the best of their type available is nothing more than a red herring. To contend that the entire impacts of OCS activities on the complex social, economic, facility and support systems of coastal regions should be limited to a tiny portion of those systems where we have good data, is like telling the broken-up accident victim in the emergency room that we have excellent data on the injuries to your right index finger, and although we don't know what is wrong with the rest of you we're going to use this good data for our diagnosis and treatment.

Furthermore, to take one "project" that started in the "spring" of 1987 and estimate the "community infrastructure" cost of that project as the settled claims in the first partial year of the project, and then to generalize these figures to the Gulf (where over 3,800 production platforms are in operation) is so statistically and logically indefensible, that Kearney (1991) solves this problem by contending that there **won't be any** infrastructure costs in the western and central Gulf associated with this proposal! Since "infrastructure is the only category examined where the massive social and economic impacts of OCS activities in the Gulf might be examined (they certainly are not considered in any of the other categories), Kearney (1991) has been able through a long, laborious, tortuous, and disingenuous process, to arrive at the position [and since the majority of appendix 8 is simply material plagiarized from the summary volume of Kearney (1991) it also ends up as MMS's conclusion] that, there won't be any social or economic impacts as a result of the proposed activities. This is a conclusion which runs counter to all scientific evidence, and indeed common sense.

4) Even when costs are quantifiable and indeed quantified, incorrect data are presented to support erroneous results. For example Kearney (1991, Pp 7-7) estimates that wetland loss due to the proposed activity will amount to .9 acres per well drilled, (and again since this section is simply material plagiarized from the summary volume of Kearney (1991)) this is the figure used in the analysis in the SID by MMS. This estimate is derived (Kearney 1991, p. 7-7) by citing MMS (1977) [which is not listed in the references] to the effect that through 1978, 7,914 exploratory and production wells had been drilled in the central Gulf of Mexico OCS region, and that 7,126 acres were estimated to have been lost due to the erosion of canals by OCS boat traffic in that region. These figures are simply wrong, and it is difficult to see how errors of this magnitude were made accidently, or how MMS did not catch them. In reality, Turner and Cahoon (1988) [research funded by MMS, and certainly available to Kearney] found that from 54,000 to 123,000 acres of wetlands had been lost due to OCS use of navigation channels prior to 1979 (almost all in the central region), and MMS (1989) [also readily available] clearly counts that through 1988 8,775 exploratory wells and 17,867 developmental wells had been drilled in the Gulf OCS region, about 90% of these off Louisiana (the central region). Turner and Cahoon's (1988) analysis reviewed data before 1979, but noted that land loss was increasing geometrically at that time, not decreasing as Kearney (1991) contends. Thus, the wetland loss rates are undoubtedly higher now. By adding the exploratory (4,829) and developmental (11,553) wells drilled through 1978 we get a total of 16,382, and if the mid-point between Turner and Cahoon's high and low estimates (88,500 acres) is divided by this figure (16,382) the results is a conservative 5.4 acres per well due only to OCS use of navigation channels, not .9 as Kearney (1991) estimated. **This is a 500% error**, but is modest when compared to those associated with the analysis of infrastructure (above). This unavoidably leads to the conclusion that:

5) The primary reason for the stunted analysis of the costs associated with OCS activity is precisely because it allows MMS to generate such large (if completely meaningless) "net social value" statistics (see below), and thus, proceed unimpeded with the leasing process. Given the grossly inaccurate assessment of costs, and that Louisiana enjoys a small share of the national benefits (less than 2% based on its proportion of the U.S. population) and considering that the vast majority of costs within the OCS would fall on Louisiana, this excess of benefits over costs disappears. The benefits to Louisiana do not outweigh the costs for the development associated with the 1992-1997 lease sales incrementally, much less when considered in the context of cumulative impacts on this state that has borne approximately 90% of the development activity to date. The "analysis" of social costs produced by Kearney (1991) amounts to little more than a disingenuous, pseudo-scientific exercise designed (through the use of untenable assumptions and liberal use of argot, to

confuse the uninitiated), to support predestined outcomes.

Third, even these feeble "costs" are further reduced by the assumptions associated with "import backouts" which are indefensible and should be excluded from all analyses used in decision making relative to the location and timing of leasing. The social costs of increased oil imports if the proposed leasing and production did not take place are calculated and then "backed out" of the "gross" social costs resulting from the proposed leasing activity. The remaining "net" social costs are then used in the cost-benefit analyses to compute the net social values used in the balancing consideration. This exercise even further reduces the social costs in producing areas which are also sites for transshipment of imported oil, deflating these already indefensibly low social costs in an additionally unrealistic way. This approach is based on several untenable assumptions, including substitution of imported oil for domestically produced natural gas and that imports of oil would increase in the same area in which the OCS natural gas and oil would not be produced without the proposed lease sales. This approach does not take into account the environmental and social costs which are already being borne by those regions, notably Louisiana, in serving as a conduit for oil imports to meet the Nation's energy needs and the fact that the social costs of OCS production add to and compound these other costs.

Fourth, the accounting procedure by which MMS arrives at the figure that is euphemistically called "net social value" estimates are illogical, and function to circumvent the intent of the OCSLAA. The net economic value of the resources expected to be produced under the five-year proposal are calculated as "the difference between the market value of expected production and the real cost of exploring, developing, producing, and transporting the expected production to market." This "net economic value" fails completely to take into account the fact that oil

and gas "produced" result in a depletion of the resource base, a practice that is short sighted to say the least. Increasingly resource economist are noting that economic indicators that do not factor the depreciation of the natural capital upon which they are based into the metric are fundamentally flawed (see Brown 1990). Whatever its failures, the "net economic value" is distributed between the lessor (U.S. Government) and the lessees (private firms)" (appendix 7, p.7-38). "Social costs" however, are calculated under the impoverished procedure described above, and occur in the region where the activity takes place. In order to calculate "net social value" MMS subtracts the "social costs" from the "net economic value" even, though there is no intention of offsetting even these grossly underestimated costs with any of the profits. So the Federal Government and industry make the profit and the State incurs the costs, and the difference between what the Federal Government and industry makes in profit and the State incurs in costs is labeled "net social value," an accounting procedure akin to depositing money in one bank, writing checks on another, and assuming your financial affairs are in order. It is precisely MMS's inability, or stubborn refusal, to understand this elementary fact; that balancing means that the profits generated in a region should go toward alleviating the impacts incurred in that region, (a fact clearly acknowledged by the President in his statement of June 1990, see Bush 1990) that has led to the flawed attempts at balancing risks and profits (noted below and by a number of sources, see National Research Council 1989; 1991; Louisiana Department of Natural Resources 1991), which are found in this proposal and which have characterized agency action in the past.

Fifth, the analysis of equitable sharing of risks and benefits is superficial, based on flawed assumptions which underestimate regional costs, and ignores the interregional comparisons implicit in the concept of "equitable sharing." The analysis of equitable sharing of risks and benefits is based on estimation of the economic benefits of the Federal revenues from OCS leasing and production, as reflected in Federal disbursements among regional units of coastal states (Table 18) and the estimation of regional costs) Table 19. The conclusion of equity is then based on the observation that for all regions the benefits outweigh the costs. Two problems undermine that conclusion. 1) This peculiar concept of sharing completely ignores the consideration in President Bush's (1990) directive that some of the benefits of OCS activity should go areas directly affected by OCS development to mitigate the costs of this development. Thus, it is not unreasonable to at least seriously examine the option that areas bearing a disproportionate amount of the costs of OCS activities, should receive a disproportionate amount of the benefits of that activity. This option is not even examined. The end result is that while there is some attempt to justify the balancing of "benefits," there is literally no attempt to balance costs. The SID fails to provide the Secretary options which might reduce undesirable environmental and social effects, mitigate cumulative effects, and better accomplish fair and equitable sharing of risks and benefits. The only statement which even addresses the distribution of costs (p. 85 of the Decision Documents) states that:

> "The development benefits of OCS leasing are shared widely while the environmental risks are concentrated in regions adjacent to the area of the OCS in which most of the unleased oil and gas resources are expected to be leased and produced. There are established mechanisms for compensating certain losses related to the OCS program and for disbursing development benefits throughout the Nation to effect a more equitable sharing of risks and benefits. In addition, stronger administrative measures may be taken with respect to certain OCS areas and activities to further reduce environmental risks and achieve more equitable sharing."

What are these established mechanisms and stronger administrative measures? Why are they not realistically presented as options for incorporation into the five year plan?

2) Even given the grossly inaccurate estimates of costs (which the State in no

way accepts), and the resulting completely flawed analysis of costs and benefits, comparisons among regions rather than absolute comparison to estimates of benefits reveals how the balancing procedure used by MMS is itself fundamentally flawed. This is an extremely conservative assumption from Louisiana's perspective, not only because of the blatant underestimation of costs, but also because it is based on conditional rather than risked resource estimates. Nonetheless, this assumption should then allow an actually more meaningful examination of equity among regions, implicit in the word "sharing" used in the OCSLA. If one assumes that coastal states implicitly bear the costs of OCS development but that inland states will nonetheless equally enjoy the benefits (a concession that the many coastal states opposing OCS leasing would undoubtedly not be prepared to make), one can then limit the examination of equity in terms of the fairness of the burden of costs borne among the coastal states compared to the benefits they receive. A more appropriate analysis of this concept is presented in Exhibit 1, based on a simple comparison of data in Tables 18 and 19. Here, the proportional sharing of benefits among the seven regions (expressed as the estimates of percent of net economic value in Table 18) is compared with the proportional sharing of costs expressed as the percent of regional costs in the moderate case scenario in Table 19. Only region IV, encompassing Texas, Louisiana, Mississippi and Alabama, and region VII (Alaska) are asked to share a greater proportion of costs than benefits in the proposed leasing plan. Region IV would in fact share 80% of the costs, but only 10% of the benefits. Based on its proportion of the population of region IV and its portion of the gross social costs in Table 12, Louisiana alone would have to share over 40% of the costs and 1.6% of the benefits. Is this equitable sharing? In summary, the analysis of equitable sharing is shockingly superficial and uncritical given the national significance of this issue.

Finally, the consideration of factors required under Section 18 of the OCSLA is grossly biased in the direction of Industry Interest. The OCS planning areas are analyzed in terms of the following Section 18 factors: their geographical, geological, and ecological characteristics; equitable sharing of development benefits and environmental risks among them; their location with respect to regional and national energy needs; their location with respect to the uses of the sea; the petroleum industry's interest in them; the laws, goals, and policies of affected States; their relative environmental sensitivity and marine productivity; and relevant environmental and predictive information. Each of these is to be considered by the Secretary in developing a comprehensive management program and a leasing plan, i.e. in determining the location and frequency of lease sales and the extent of the offering within each area. As Exhibit 2 demonstrates, the activity proposed for 1992-1997 is unambiguously related to Industry Interest and shows no significant influence of any of the other Section 18 factors. The proposed leasing activity even seems more closely related to the Industry Interest than to net economic value, a calculation heavily based on the government-derived undiscovered resource estimates. Areas of greatest Industry Interest are scheduled for more frequent sales and for area-wide sales. Areas of low Industry Interest are scheduled for few sales and focused offerings of tracts of selected interest are proposed. What this means is that the same decision could have been reached merely by polling the Industry, without costly resource estimates and analyses of social costs, productivity and sensitivity by the Department of the Interior. Consideration of the other required Section 18 factors in the Decision Documents, although based on laborious and often pseudoquantative analysis, is gratuitous.

The failure to give weight to the other Section 18 factors is of particular significance to the State of Louisiana. The MMS analyses indicate that the Central Gulf of Mexico Planning Area--off Louisiana, Mississippi and parts of Alabama--has the highest social costs associated with the proposed leasing program, has the most sensitive coastal habitats and has marine productivity in the "high" category (Exhibit

1). It is not clear how these Section 18 factors were considered by the Secretary in the decision to plan annual, area-wide leasing without any conditional stipulations for the Central Gulf of Mexico area.

DRAFT ENVIRONMENTAL IMPACT STATEMENT

There are a number of serious deficiencies in the draft environmental impact statement. These are discussed below in order from the more general to the most specific.

First, the proposed activity will involve "area-wide" leasing for the central and western Gulf on an annual basis. The alternatives to the "proposed activity" are completely unrealistic, and do not even consider a return to a more carefully controlled leasing schedule, such as the one by which the OCS was successfully leased from 1954 to 1983, and which was part of President Bush's (1990) directive to the Secretary of Interior. The State has repeatedly objected to area-wide leasing, which not only looses revenue for the Federal Government, but exposes the State to the effects of another massive boom/bust cycle of development.

Exhibit 3 and table 1 utilize the data in Minerals Management Service (1989) and clearly demonstrate the relationship (inverse) between acreage offered for lease and bonus bids per acre. While it could be argued that the drop in oil prices in 1985 had significant impact on the bonus bids per acre, it is interesting to note that even though the price of oil has risen over the last several years, the last area wide lease sale (#135) resulted in the lowest per acre average bonus bids in recent history. The most elementary relationships between supply, demand, and price, would lead us to expect that with demand relatively flat, and supply enormous, price will not rise. This continued devaluation of OCS lands will adversely affect the economy of the State of

Louisiana, and leave less cushion for the inevitable necessity to diversify our economy as finite reserves in the Gulf are depleted.

Of at least as great a concern to the State is the possibility that area-wide leasing will lead to another massive boom/bust cycle. One of the fundamental deficits in the proposed five year plan is MMS's failure to appreciate the nature of our OCS related human environmental impacts, and how these are exacerbated by the boom/bust cycles that can accompany OCS development. Put simply, by opening up virtually all of the Gulf Outer Continental Shelf for leasing, and holding such lease sales semi-annually, as MMS has done and proposes to continue doing, the stage is set so that in periods of extreme and sudden oil price inflation, such as have occurred in the past, exploration, development, and production can almost immediately expand into the huge vacuum of the central and western gulf regions, and bring on another uncontrolled and uncontrollable oil "boom." Our painful experience, and the extant scientific research, show that the more extreme the boom, the more devastating will be the effect of the following, inevitable, oil price moderation, or "bust." Thus when MMS bases its arguments upon the assumption that the opening up of vast areas for exploration, development, and production constitutes a social and economic good, because it augurs toward enabling another economic boom (temporary, extreme, and unsustainable economic prosperity, and the development of un-supportable facilities and human skills), they miss the point. To seek another boom without some kind of legal or policy moderation **is** to seek another un-moderated bust with all of its accompanying social and economic devastation.

What Louisiana wants, and needs, is some control over the boom/bust cycle; moderation; legal/policy structures that inhibit extreme swings from boom to bust and back again as the un-buffered effect of erratic oil price fluctuations. Since we have no control over the vagaries of the world oil market, our best chance of moderating these destructive cycles is to limit the areas in the Gulf of Mexico that are available for the expansion of OCS activity during the inevitable, but unpredictable, periods of high oil prices. Under a more controlled and smaller scale leasing schedule we might not be left entirely at the mercy of what has historically been an extremely, and increasingly unstable world oil market. Present area wide leasing policies, however, leave us completely exposed to the merciless workings of the boom/bust cycle as an un-buffered consequence of oil price shifts.

The "caps" proposed in the SID as an option (but not considered in the EIS) might well work if the cap is set realistically. The discussion in the SID mentions the "historical tract selection sale size of 1 to 3 million acres," but there were no sales over 1 million acres until area wide leasing in 1983, the last area-wide sale in the Gulf (135) was of 142 tracts, or a little over 800,000 acres, and there have been only four sales of over 2 million acres in the history of the OCS leasing program. The average sale size before area-wide leasing was well under 500,000 acres and all but eight of them (out of a total of 47) produced more revenue than sale 135 (which produced 62.6 million). Thus a cap of approximately 500,000 acres might well both increase revenue, and protect the State from another massive, cyclical, developmental cycle.

Second, and related to the first comment, all the assumptions of the draft EIS about the level of OCS activity and impact over the forty-nine year period of the proposed lease plan fail to adequately consider **the primary determinant of the level of OCS activity: world oil price**. The draft EIS, by assuming world oil price stability (clearly an untenable assumption), factors it out of realistic discussions concerning the impacts of the proposed actions.

Although it is surely impossible to predict what oil prices will be at any given date in the future, dependent as they are upon a vast array of events, from geo-political alliances and enmities, to the moods of various oil rich despots, it is certain that the world oil price will not be stable at **any** level during the next forty-nine years.

Nevertheless, it is oil price that determines OCS activity (see exhibit 4 for the close relationship between prices and drilling activity, and the recent volatility of world oil prices), and what we **do** know about it; its sometimes volatile instability, its recorded highs and lows, must enter into any serious attempt to predict the effect of OCS leasing activity.

The effect of such a fundamentally erroneous assumption as that of oil price stability, is far reaching and fatal to the credibility of much of the draft EIS. Because of that analytical deficit the general, picture of OCS activity offered in graphs and tables (pages IV.D-1 to IV.D-16) and figuring into virtually every assessment in the draft EIS, is one of gradually increasing activity peaking at roughly the middle of the forty-nine year period and gradually tapering off near the end of the lease period.

It is almost certain that these smooth curves will prove to be wrong. This analytical approach which is demonstrably unrealistic and produces predictions that are at odds with actual historical data, allows MMS to analytically ignore the effects of inherent instability in the world market. That instability itself constitutes a major source of impact on the coastal, marine, and particularly the human environment. Louisiana's coastal economies are closely tied to these fluctuations in the world market (see exhibit 5), and recent declines in that market have led not only to unemployment and under-employment, but to out-migration from coastal parishes (see table 2). Thus, acknowledgement of the uncertainty involved in predicting future activity, and hence future impacts, and calculation based on much wider confidence intervals, is a necessary step toward realistic assessment of the impacts of MMS's activity.

Third, given the unrealistic assumption of price stability, and the demonstrated link between price instability and many impacts on the human environment, it is not surprising to find that the EIS has literally no reasonable analysis of the impacts on coastal social and economic systems that would be of any use in understanding how

the proposed action will affect these systems in the State of Louisiana (or any other state or region). There are several cursory discussions of select statistics associated with human populations in the Gulf area, the most extensive being the discussion of "the socioeconomic environment" Pp. III-30 to III-42. Unfortunately, the presentations are at a level of generality such as to be useless, or are dead wrong. The discussion of "demography and employment" (about a page and a half) is totally useless for anything approaching an analysis, and the population projection that follows it is misleading, and simply wrong. The projection uses national coastal data and projections from National Planning Association Data Services, Inc. (not in the references) to project that "The population of counties and parishes in the Gulf of Mexico socioeconomic impact area is expected to increase 27 percent from 1988 population levels by the year 2010, a higher population growth than expected for coastal regions nationwide." Table 2 presents the actual data for the eight coastal zone parishes most heavily impacted by OCS activity in Louisiana. Even a cursory glance at the table will demonstrate the folly of utilizing the above projection in an area heavily impacted by OCS activity. The remainder of the "projections" section (about a half page) is a curious collection of "facts" strung together with no apparent logic, and at a similarly irrelevant level of generality. The remaining 10 pages of the section discuss land use, oil and gas infrastructure, fisheries, archaeological resources, and recreation and tourism at similar (Gulf States) levels of generality, reflecting the same impoverished definition of the human environment as evidenced in the SID.

Not only does the EIS fail to address the issues surrounding impacts on the human environment, it even attempts to justify this omission. In the section "Assessment of Programmatic Concerns (IV.B) under "Human Behavior and Activity" the account starts with the notation by the National Academy of Sciences that with regard to past environmental impact statements produced by MMS "significant types of social and economic impacts have been ignored (in EIS analysis)." Setting aside the fact that the quote (actually National Research Council 1989, p. 56) is preceded by a paragraph which elaborates on an opening theme that "Standard social and economic analysis have been inadequate" (in this EIS they are non-existent), the account continues in a rambling fashion to discredit the massive opposition to the OCS leasing program (the account is made more impenetrable by the fact that none of the 14 citations in the three page discussion are listed in the reference section of the EIS). The basic argument seems to be that all of those people and organizations who oppose the leasing program are simply not being objective, and that "The ability to reduce these effects requires the ability to influence perceptions consistent with objective evaluation of the issues." This arrogant assertion that the position of the agency is the objective position flies against the accumulating evidence that the views of affected citizens are often more rational than agency assumptions would suggest (Mitchell, 1984; Dunlap and Olsen, 1984; Szasz, 1990; Slovic et al., 1984), while official agency positions are likely to be subject to far greater errors and vested interests than those in the agency perceive (Perrow, 1984; Clarke, 1988; Freudenburg, 1988). MMS has simply taken the strategy of discrediting their opponents, and the legitimate concerns about OCS activity, and the demonstrable impacts of that activity, are arrogantly rejected. The bottom line is that although the State of Louisiana has produced about 90% of all resources on the U.S. OCS, and although the State has repeatedly noted that the major impacts from this massive activity are those on human **social and economic systems**, and on our wetlands MMS continues to treat these concerns in a fashion that can only be interpreted as disdain.

Fourth, in general, the analysis of impacts of physical activities on coastal wetlands (by any objective analysis the most significant environmental impact of OCS development yet experienced), betrays a lack of understanding of the nature of these impacts, their social costs, and the options available to prevent and mitigate them. Setting aside the 500% error in the estimates noted above (see the "social costs" discussion under comments on the SID), assumptions of impacts on wetlands grossly underestimate the nature of the problem in several additional ways: a) providing in the EIS, without rationale, improbably low estimates of new coastal pipeline construction, and oil spill impacts which would result from new OCS development; b) developing a naive and/or biased assessment of cumulative impacts in the EIS; and c) failure to relate coastal wetland loss to biological productivity, particularly fisheries.

The EIS estimates the effects of development initiated as a result of the proposed lease sales and future lease sales, by first estimating the number of pipeline landfalls and shore base/support facilities which would result under three cases: the base case, the high case, and the cumulative case. It assumes that four new pipelines would occur during the life of the proposed action in the Gulf of Mexico (two in the Mobile area, and two along the Texas coast) under either the base or high case. That is, the EIS assumes no new pipeline landfalls, and thus transits through coastal wetlands, would occur in Louisiana. The cumulative case assumes that eight new pipeline landfalls would occur, including some unspecified number (obviously less than four, considering the location of those already mentioned) near the mouth of the Mississippi River. These assumptions are completely unsupported by analysis, and run counter to both the history of development and the other assumptions of where offshore development is projected to take place. Under the base case, it is assumed that 110 new platforms, 980 development and production wells, and 1240 miles of pipeline would result in the central GOM planning area, in all three cases the significant majority of projections for the entire Gulf of Mexico region. Yet the assumption is that this would occur with no new pipeline landfalls! Under the high case those numbers would jump to 210, 2,110, and 1,740, respectively, again with no consequences onshore.

Furthermore, the effects of OCS activities are down-played in several of the other assumptions used. The assumption that 0.68 ha/km of wetlands are lost in a OCS pipeline crossing is, firstly, inexplicably lower than the rate of 0.90 ha/km used for pipelines serving tidelands production (p. IV.D-591) and, secondly, ignores the much larger indirect effects on wetlands loss. Finally, the analysis apparently assumes that the existing pipeline network (some parts of it over 20 years old), will last for another 49 years over the life of the project without the need for repair or replacement, activities which are also damaging to wetlands, but not part of MMS's analysis.

The assumption that the most likely location for contact from an offshore oil spill along the stretch of coastline extending from western Louisiana to eastern Texas, a coast fronted by barrier islands and beaches, and consequently that only 33 percent of the oil that contacts the coast would move into estuarine embayments and potential contact wetlands, is also wrong. MMS's own analyses presented in previous EIS documents as well as the simple fact that most of the oil (as opposed to gas) production is off southeastern Louisiana, would suggest a greater risk for the coastline of the Mississippi Deltaic Plain, which is not fronted by uninterrupted barrier beaches and has extensive wetlands easily exposed to oil reaching the coast. Although the EIS estimates wetland losses which might result from bank erosion of navigation channels, it does not consider losses which might result from channel widening which is necessitated for transport of larger platform components required for deep-water development. Finally, the logic used by MMS in concluding that under No Action alternative (i.e. no additional OCS development) more wetlands would be lost than under the Proposed Action is nothing but perverse. It is based on all of the above fallacies and completely ignores 40 years of experience which indicates that physical impacts related to OCS development, not oil spills, have been a major factor in coastal wetland loss in Louisiana.

There are now good data and analyses which have resulted from MMS-supported studies that show that through 1978, between 21,863 and 49,884 ha of wetlands have been lost in Louisiana as a direct or indirect result of OCS-related physical activities (Turner and Cahoon 1988). This is an impact of major proportions which simply would not be tolerated in any other OCS region. The assertion that only 200 ha would be lost as a result of the proposed plan--and none of it in Louisiana, despite the fact that this is where the majority of the offshore production activity would most likely take place--stretches credibility beyond the breaking point and demands far more objective and detailed analysis than provided in the EIS.

In discussion of the effects on fisheries, the EIS fails to consider the losses in biological productivity and, in particular, in fisheries productivity which have resulted (cumulative case) and may occur (proposed program) as a consequence of wetland losses associated with OCS development. The EIS correctly notes that both the commercial and recreational fisheries of the northern Gulf of Mexico are dominated by estuarine dependent species. The population size and environmental carrying capacity for these species, and thus their yields, are thought to be limited by the size and condition of the estuarine-wetland nursery grounds. National Marine Fisheries Service models of secondary biological productivity, assuming it is related to the extent of the interface between wetlands and open water, have projected a dramatic decline in fisheries yields in the 1990's as a result of continued coastal wetland deterioration. With the understanding that the rich biological productivity is related to the linear dimensions of the wetland habitat, not just to its areal dimensions, it should be appreciated that any additional, avoidable losses of wetlands are not simply additive but are compounding.

The discussion of cumulative impacts on coastal wetlands seriously misses the requirements for adequate assessment of this most serious issue. The analyses and discussions are clearly biased to not only minimize the estimation of OCS-related impacts, but also to trivialize them by exaggerated comparisons with other factors affecting wetlands. This discussion says nothing about the impacts which have already occurred as a result of OCS activities, nor about the indirect effects of these activities which have yet to be fully realized, nor about those effects which may occur from further development of tracts already leased. It considers only the losses which might result from lease sales proposed over this 5-year period and beyond. This limited consideration clearly does not meet the intent of OCSLA to consider cumulative effects: The issue is; what are the cumulative effects--past, present and future--and how does the proposed action contribute to them. The simple answer, with respect to Louisiana's coastal wetlands is; that the cumulative impacts have been significant, are essentially irreversible, and will be worsened by the proposed action. The important questions are; how will they be worsened (qualitatively as well as quantitatively), and what can be done to minimize this impact and, to the degree possible, reverse the cumulative effects.

Instead of a useful and innovative assessment of these questions, the discussion of cumulative impacts spends most of its space discussing the impacts which cannot be regulated by the comprehensive OCS resource management program. It juxtaposes estimates of OCS related effects (which are serious underestimates), with unrealistically high estimates resulting from tideland oil and gas development, other vessel traffic, and spills of imported oil, in a sad attempt to trivialize OCS-related effects. It then presents a sophomoric exposition of the role of sediment deprivation and subsidence in wetland losses, which fails to recognize the interrelationship of these processes with the channelization resulting from oil and gas development.

Finally, it is difficult to assess and respond to much of the draft EIS since it is often difficult to check assertions made throughout the document. The reference section at the end of the document bears little resemblance to the works cited in the text, with numerous omissions.

OVERALL COMMENTS

The documents supporting OCS development in the Gulf contradict one another, both across documents and across time. For example, across time, the final environmental impact statement for the five year leasing program 1987-1992 concludes that impacts to wetlands in the central Gulf will be high. The draft environmental impact statement for the 1992-1997 proposed leasing schedule plays down the impacts to wetlands. The programs are essentially the same (annual area wide lease sales over five years) the only variable that seems to account for the difference is the greater appreciation of the role and value of wetlands, including the "no net loss" policy initiated by Executive Order No. 11990. Thus, wetlands are to be protected, and so OCS activities 1992-1997 will have little impact, by administrative fiat.

Likewise there is little consistency between the documents supporting the 1992-1997 proposed leasing schedule. The draft EIS contends that in the Gulf of Mexico region (page IV.D-186) up to 175 ha. (433 acres) "are expected to be eroded along navigation channels as a result of OCS-vessel traffic within the channels." But, appendix 8 (page 8-95) in the decision documents volume estimates .9 acres lost due to vessel traffic per exploration or development well, and the draft EIS (page IV.D-3) estimates 4,030 wells over the life of the proposed action. Simple multiplication would produce an estimate of 3,627 acres lost due to this estimation technique, or over a 700% difference depending on which data **contained in the draft proposal** are used. When this is coupled with the fact that the .9 acre per well wetland loss is itself a

500% error (see above) one must question the integrity of the entire proposal.

It is difficult to believe that all of the omissions, faulty calculations, and use of incorrect data are **all** coincindently in the direction of minimizing the estimated impacts of OCS activities under the proposed action. In fact, the documents supporting the proposed 1992-1997 leasing schedule can be seen as little more than poorly prepared apologies, based on bad, pseudo, and non-existent science, for a decision that has already been made. They make a travesty of the legislative foundations underlying the OCS program, and a mockery of the intent of congress in passing that legislation. The bottom line is that the proposal is an embarrassment to the Federal Government, and an insult to the State of Louisiana.

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NOTES

ATTACHMENT # 3

ADVERSE IMPACTS TO WETLANDS

Contents

A. New Impacts
  A.1. Non-specific nature of impacts mentioned
    A.1.a. Navigation Channel Dredging
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B. Continuing Impacts

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D. Endangered species

E. References

Appendix 1. An Interpretation of MMS estimates of wetland losses for a recent sale (131 and 135)

Appendix 2. Examples of Alternatives for MMS to address concerns by Louisiana.

Tables

Table 1. Estimations of various impacts of past lease sales and from proposed 1992-1997 lease plan.

Summary

The Draft EIS prepared in anticipation of the proposed 1992-1997 OCS leasing program is inadequate for at least two broad reasons related to environmental impact assessment. First, the discussion of new impacts is non-specific, quantitatively inaccurate, and generally omits important indirect impacts. Second, absolutely no quantification of the continuing environmental impacts of past leasing is considered in this document. It is as if impacts from past lease sales stopped in 1992 (or even 1978). Further, restoration of continuing impacts from previous lease sales cannot take place when 90% of the proposed resource developments from the 1992-1997 lease program must use existing infrastructure. There is a rather conservative statement in the Draft EIS that says:

> "The distribution of costs among the population tends to be skewed towards residents of coastal states." (pg. 84).

This is a vast understatement. The great majority of these impacts occur in coastal Louisiana because of Louisiana's dominant position in both the discovery/recovery phases and in the transportation/processing infrastructure. Greater than 90% of the past, present and future OCS resources are off Louisiana. Consequently, a proportional amount of the environmental impacts have occurred here, and will continue to occur in Louisiana, as a result of past leasing plans. The proposed 5 year leasing plan Draft EIS represents a partial continuation of those attitudes and policies that the State of Louisiana wishes to change, and for good reason.

Louisiana cannot look the other way while its coastal resources wash into the sea. Louisiana will not do so. It is valuable at present for various social, ethical and economic reasons; these resources will be more valuable after the last residues of oil and gas are extracted. The Federal government should not pretend the impacts do not exist or to minimize them through incomplete and underfunded resource evaluations. The nation may need to develop these offshore resources, but the state of Louisiana should not be the principle state to suffer the consequences of that development. If these resources are to be developed, then the Federal Government must take a leadership role in the restoration of these resources. The Federal Government should initiate an equitable distribution of benefits, commensurate with the impacts. There must be a more serious attempt on the part of the Federal Government to: 1) determine the scale of the proposed development, 2) to develop scientific, managerial and socio-economic resources to avoid the avoidable impacts, and, 3) to minimize and mitigate the unavoidable impacts. As an example, the State notes that the resources of the MMS Environmental Studies Program have been largely squandered in an analysis of frontier areas[1] and do not meet the needs of Louisiana. Further, those MMS-sponsored analyses in OCS areas outside the Gulf of Mexico have been critically reviewed as inadequate (NRC, 1990) for purposes of leasing and the results are not transferable to an analysis of the Louisiana continental shelf, in general.

Based on the above, and for reasons discussed in other communications to the DOI, this Draft EIS does not meet the state's requirements for a 'consistency' determination for management of the State's Coastal Zone.

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[1] There were $50 KKK in lease sales, bonus, etc., from Louisiana from 1973 to 1988, and about $76KK for environmental studies from MMS from 1973 to 1990. Thus, there was about 0.15% of federal receipts for all MMS-sponsored environmental studies. There was $435 KK spent in environmental studies budget for US in the last 30 years. Of that, $23KK was spend in the Central GOM area and 17% for the entire Gulf of Mexico. By way of comparison, about 95% of MMS revenues were from the Central Gulf of Mexico planning area.

A. New Impacts

The Draft EIS is deficient because of the non-specific nature of impacts identified, for the inadequate quantification of impacts, and for the prefunctory and/or missing quantification of impacts, especially of the indirect impacts.

A.1. Non-specific nature of several impacts mentioned in the Draft EIS

A.1.a. Navigation Channel Dredging

Certain specific environmental impacts are mentioned, but not quantified. These include the impacts of salt water intrusion, navigation channel dredging, and infrastructure use. Deepening channels is mentioned in several locations of the Draft EIS as being anticipated following resource recovered. This lease development will result in an anticipated 10 percent of all the navigation channels in the Gulf of Mexico to be deepened. Further, "the widening of navigation channels at the expense of wetlands will only be a problem in coastal Louisiana". The implications is that navigation channels will be widened, that more salt intrusion will occur, and that erosional forces will increase as the size the tidal exchanges, and vessel use increases. The direct impacts per length of navigation channel are more than 20 times that of OCS onshore pipeline channels (Baumann and Turner 1990). Yet, the proposed channels have not been identified, the dredging activity proposed is not described (depth, width, volume), nor are the impacts modelled either verbally, or quantitatively. There is no basis for assuming minimal impacts (as implied by the omission) in the absence of information. To the contrary, the State's experience is that navigation channel dredging has enormous negative consequences to wetland health.

A.1.b. Infrastructure Use

> "Production from offshore Florida will be transported to receiving facilities along the Louisiana/Mississippi/Alabama coasts by pipeline or shuttle tanker." (IV.D-184).

This is virtually the entire analysis of these impacts - a sweeping statement applicable to 3 state coastal zones! What receiving facilities, what part of the coast and by what proportion will this infrastructure use occur? Broad conclusions on the scale of the Gulf of Mexico do not help individual communities evaluate the impacts. State agencies responsible for planning cannot begin to tackle this issue without details. What navigation channels are to be deepened? What marshes will experience saltwater intrusion? How much is the channel to be dredged? How much material will be dredged and where will it be placed? What compensatory actions will be taken to avoid, minimize or compensate for these impacts? Who will pay for the impacts?

A.2. Indirect Impacts

The discussion of wetland impacts in the proposed 1992-1997 leasing plan are directed towards direct impacts only, and does not address indirect impacts. Wetland impacts from OCS development may arise from the immediate impacts of waste discharge, dredging, oil spills, etc., but also from the subsequent complications and consequences of these immediate, or direct, impacts. The subsequent impacts following the direct impacts are known as indirect impacts. The document, in general, identifies (qualitatively) the obvious direct impacts from OCS development, but it includes sparse or non-existent discussion of the indirect impacts. This analytical myopia is inconsistent with President's Bush stated interest in achieving "no net wetland loss", because many of these indirect impacts affect wetlands detrimentally. This narrow perspective has the effect of lowering the estimate of impacts, and reducing the scope of responsibilities for environmental management, to preposterously low levels. Further, the State of Louisiana Coastal Use Guidelines requires consideration of indirect impacts and their cumulative long-term effect. Thus, the proposed 1992-1997 lease plan is not consistent with the State Coastal Use Guidelines.

Wetland impacts from OCS development have been documented in Turner and Cahoon (1987), - a report prepared for MMS. The period of reference for that report was mostly 1955 to 1978. A chapter of that 1987 study is now in the scientific literature that reports on the direct impacts of OCS development (Baumann and Turner 1990). This chapter and the journal article clearly stated that indirect impacts followed from the direct impacts from the initial construction activity. These subsequent impacts include channel widening, secondary impacts from dredging (e.g. impoundment, shoreline erosion, secondary development). Yet, the OCS 5 year planning document (OCS EIS/EA MMS 91-0044) uses only the estimates of direct impacts to quantify pipeline impacts. For example,

> "Production from offshore Florida will be transported to receiving facilities along the Louisiana/Mississippi/Alabama coasts by pipeline or shuttle tanker. Impacts to wetlands from pipeline projects are estimated to affect 0.68 ha/km." (IV.D-184).

The 0.68 ha/km number used is apparently from an MMS-sponsored project by Turner and Cahoon (1987) that was subsequently published (Baumann and Turner 1990). That number applies to direct impacts only, and and does not include indirect impacts. Further, that number is based on an analysis of aerial imagery for the period 1955 to 1978. Impacts occurring after 1978 are not included. There is no justification for excluding the indirect impacts (estimated to be equivalent to another 2X the area in Turner and Cahoon, 1987) or for excluding cumulative impacts accumulating after 1978.

Additional indirect impacts will follow from navigation channel dredging, an inability to remove infrastructure as a consequence of continued use, and other reasons discussed herein.[2]

A.3. Ignorance of impacts

A.3.a. Fisheries:wetland relationships

The proposed lease plan completely ignores several impacts. Two of these are the impacts on fisheries and maintenance dredging. The effects of OCS development on Louisiana's fisheries are substantial and ignored. This is a vast national resource that amounts to 25 to 30% of the nation's fisheries harvest each year. The planning document does not include the effect of wetland losses on fisheries. Its sole concern is the consequences of oil spills, e.g.,

> "Any loss of fish resources will be replaced through natural recruitment from the next generation. The principal cause of impacts is spilled oil." (IV.D-154.; Conclusions).

The relationship between commercial fisheries and wetlands in the northern Gulf of Mexico is well-documented and agreed upon by virtually all coastal fisheries agencies in the region.

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[2] Note: Reference to page IV.D-184:

> "Impacts to wetlands from pipeline projects are estimated to affect 0.68 ha/km. Assuming a 40 km length of each pipeline through wetlands, the expected 4 new pipeline landfalls will affect 27 ha of wetlands."

The mathematical calculation is in error. Four pipelines of 40 km each, with an impact of 0.68 ha/km = 109 ha. The arithmetic is correct for one pipeline, but not four pipelines (0.68 ha/km X 40 km = 27 ha. However, the basis for the 0.68 ha/km is incorrect for the purposes of an EIS.

Almost all of the commercially-important species landed in the region are dependent on these wetlands. The fisheries value of the wetlands can be estimated as the value of the product per wetland area times a standard economic multiplier to account for value-added during subsequent processing and handling. In 1989 this amounts to about $1,100 per acre. Wetland losses that are permanent accumulate equivalent fisheries losses for the year of impact and all subsequent years. Fishing enterprises are a major sustainable resource base for southern Louisiana and in 1990s generated more than 1 billion dollars in the economy. The effect of wetland losses on the fisheries thus extends way beyond the life of the oil fields and is of great concern to Louisiana. Estimates of the economic value of the wetland losses are provided in Table 1 (discussed below).

A.3.b. Maintenance dredging

The impact of dredging is explicitly ignored (in a quantitative sense) in the document. For example,

> "Although the effects of maintenance dredging on wetlands, and the contribution of the OCS program to the maintenance dredging schedule for Gulf waterways have not been determined, it is assumed that the impacts from maintenance dredging will result in the permanent loss of scores of hectares of wetlands." page IV.D-85. (emphasis added)

No attempt is made to determine the magnitude of these impacts! These are considered by the State of Louisiana to be an inherent part of the environmental impacts because:

> "It is assumed, for analysis purposes, that there will be about 90-cent use of these facilities in support of future OCS operations." (IV.D-44.).

Dredging has conspicuously important impacts on wetland losses amounting to 1000s of acres annually (Turner and Cahoon, 1987). The Draft EIS cannot be considered as meeting the Coastal Use Guidelines without quantification of these impacts. The Draft EIS is therefore a fatally flawed document.

A.4. Contradictory estimations

The Draft EIS has contradictory statements about the scale of wetland impacts. In the economic analysis chapter (8) they use a figure of 0.9 acre lost per well, which amounts to 3 to 8 times more wetland loss than the 175 ha estimated in the text of the EIS.

Previous MMS impact analyses for individual sales of equivalent arguments give different results. What is the basis for this discrepancy between the less than 1 square mile of wetland loss for this 5 year plan (175 ha) for a single lease sale of 1/10th the size e.g. 131 and 135 (see Appendix 1) of 9 to 30 square miles? What is the basis for determining that this lease sale would have no impact on barrier island erosion, but that the much smaller Sale 135 will result in up to a 2 m annual retreat of barrier island? At that rate, barrier island erosion would be sufficient to eliminate the island halfway before the end of the lease. These are incredible ranges of impacts for similar activities occurring in the same general location. In a 5 year lease sale there are no impacts on barrier island erosion or wetland loss, but in the latest lease sale MMS estimated that there are incredible losses to the point that entire islands would disappear and thousands of acres of wetland be lost!

B. Continuing Impacts

OCS development impacts from the proposed lease sale will result in significant continuation of past development activities. Consequently, impacts arising from these past activities, and new impacts arising from them, will accumulate throughout the life of the next lease sale (45 years; IV.D-19). Wetland loss rates will continue in certain areas, with restoration delayed and natural recovery prohibited (e.g., through maintenance dredging) and continuation of indirect impacts (Swenson and Turner 1987; Cahoon and Turner 1989; Turner and Rao, 1990). Loss rates are already some of the highest in the country (i.e. Turner and Cahoon, 1987). There will be continued demand for social and economic services that affect water quality, drainage, and wetland use.

The EIS does not acknowledge, quantitatively, that past impacts from OCS activity will continue into the future as a consequence of the proposed new lease plan, even without new facilities. The processes leading to past losses will continue to occur as previously built pipelines are continued to be used at the old location. The continuing impacts of their past and present uses are not likely to be reversed as long as the facilities are used. New impacts will accumulate with the old impacts. Navigation channels, dredge and fill operations, and fabrication yards, for example, will continue to be used by the proposed new OCS development. Accompanying these continuing yses is the increasing probability for introduction of toxic materials into the neighboring wetland, induced ancillary impacts from transportation and hydrologic changes, and perhaps enlarged areal uses. These continuing impacts are completely neglected in the analysis and are exceedingly important impacts.

There should be no doubt that this is a serious problem. Most of the oil and gas proposed to be recovered will use the infrastructure currently in place.

> "It is assumed, for analysis purposes, that there will be about 90-cent use of these facilities in support of future OCS operations." (IV.D-44.)

In other words, 90% of the existing infrastructure will be required for this proposed new phase. Consequently, its use will largely prohibit restoration that the State is prepared to initiate. As long as restoration is delayed, the State of Louisiana will continue to suffer environmental impacts from past activities. Complicating restoration efforts is the continued lack of adequate funding to address environmental impact problems, including those that would share light on the severity of impacts, their restoration, and equitable mitigation given different policy options. Although 90% of MMS's OCS revenues are from the Louisiana coast, less than 6% of the environmental studies budget ($500 KK since 1973) is spent on these areas. A National Research Council report (cited in Farrow, 1990) agreed (mostly related to Florida and California lease plans) that "information was inadequate for informed decision making in those areas." and "socioeconomic information in particular has been too narrowly construed and too little research has been conducted," and "ecologic and physical oceanographic information was inadequate." (p. 147). Further, the studies are often strictly descriptive studies" that do not contribute towards predictive understanding of how the system supports, for example, such a productive fisheries, extensive wetlands, etc. It seems justified to suggest that a sustained and explicitly scientific approach to understanding the largest OCS leasing site (the northern GOM) should be supported to separate the natural variations from the impacts of the extensive onshore and offshore OCS development. Results from such a study should generate information useful to other OCS development lease sites. Consequently, the impacts from specific sales are not documented or understood, due to lack of effort to investigate them, not from lack of impacts.

This unsatisfactory aspect of the continuing impact analysis is large enough, by itself, to justify extreme concern on the part of the State. No analysis of these impacts were attempted, in any fashion, in the EIS. Some examples are provided in Table 1 to outline the scale of these continuing impacts. Several estimations were attempted, using various assumptions. A range of $9,000 to $20,000 per acre lost was used in analysis, per the conditions of the Draft EIS Economic chapter (Appendix 8) that contains estimates of wetland societal value. (Note, elsewhere, wetland value was estimated to be worth "$11,611 - 58,280 per acre lost (1975$; in Farrow, pg. 70)). The most recent National Marine Fisheries Service landing data for the northern Gulf of Mexico were used for establishing an annual value for fisheries (1990 dollars) per acre wetland. One estimator was based on the predicted 0.9 acre lost per exploration and development well (page 8-95). For the period 1978 to 1992, a conservative estimate of wetland loss due to OCS activities excluded post 1978 development and was based on 50% of the 1955-1978 rate. For the period 1992 to 2037, a conservative estimate of wetland loss due to OCS activities excluded post 1978 development and was based on 10% of the 1955-1978 rate. Other assumptions are provided in the table. Another alternative included all navigation channel impacts, because many of them would not be built without OCS activity - i.e. all vessel trips are not equal and OCS vessels require the larger channels, or the channels would not have been built (according to original design criteria).

Impacts from 1955 to 1978 are documented in Turner and Cahoon (1987), which represents a consensus estimate by the 18 scientists involved. The areal extent of wetland losses attributable to OCS activities ranged between 21,863 to 49,884 ha. The economic equivalent value, using conversions in the Draft EIS, is between $200 million to $1,000 million. The impacts from those past activites were conservatively estimated to continue between 1978 and 1992 at one-half the rate for the period of the Turner and Cahoon report (1955-1978). The comparable cumulative losses for this second period were an additional 6,654 to 15,182 ha, and $60 million to $304 million (there are an upper and lower value for the area lost and for the $ value/acre). A conservative estimation of rates from 1992 to 2037 was conducted on the basis of a 10% wetland loss rates as a result of OCS activities present in 1978. The sum of the wetland loss from 1955 to 2037 is in the range of 32 to 74 thousand ha, with a value between $395 million to $1,555 million dollars. These numbers are an order of magnitude larger than the areal losses and economic impacts from the proposed lease plan. Further, the analysis of the executive summary is the lowest estimate of all the various methods, by an additional order of magnitude. Thus, the impacts of previous lease sales must be included in the environmental impact assessment, but was not.

C. Cumulative impacts

Table 1 also includes various measures of cumulative impacts, in line with the previous discussion. The cumulative impact on the commercial fishing sector is enormous (billions of dollars) because of the accumulating lost value of wetland-dependent fisheries. Billions of dollars of "new" resources accumulate over the life of the 45 lease as wetland losses accumulate and cannot be restored. This conclusion is fundamentally sound even if the analysis is off by an order of magnitude. The accumulation of millions of dollars of fisheries products are compromised with the accumulating impacts of past and proposed impacts. Two recent sales (131 and 135) alone would result in tens of square miles of wetland losses (see Appendix 1) worth hundreds of millions of dollars (based on numbers provided in the EIS for those sales). For example, the area of wetland losses from 1955 to 1978 is in the range of 21 to 49 thousand ha, or 81 to 189 square miles (disregarding for the moment the ongoing losses from the same activities). This means that a firsheries equivalent to $57 to 133 million is lost each year, and every year that these losses cannot be reversed (through the continued use of the infrastructure which is 45 year in this case). The impact of the proposed lease plan on Louisiana fisheries, by itself, is sufficient to protest the Draft EIS as inadequate and underscores the inadequacy of the analysis and leasing program.

This analysis is admittedly incomplete, but serves to underscore the importance that the State of Louisiana places on ongoing impacts from previous leasing programs, the lack of adequate or incomplete analysis of the proposed 1992-1997 leasing program direct impacts, and the continuation of past development in light of the proposed use of existing infrastructure.

D. Endangered species

On page IV.D-178 there is the summary statement:

> "There will be no discernible decline in marine turtle populations, and no change in distribution and abundance."

This contrasts with previous estimates for similar sales of one-tenth the size of this Draft EIS (including 131 and 135). These individual sales concluded that there will be 'moderate' impacts on the endangered Kemp's Ridley turtle. 'Moderate', as defined by MMS in those lease sale 131 and 135 documents is:

> "The partial loss of a regional population or minor portions of critical habitat. Recovery to pre-interference conditions is probable 1 to 2 generations."

It is not clear as to why there is such a strong contrast between the impacts of similar activities in the same lease area for the latest sale lease document and in the proposed 5 year Draft EIS. Section 7(a)(2) of the 1973 Endangered Species Act (ESA) mandates all federal agencies to not jeopardize the continued existence or adversely affect critical habitat of listed species. Section 7(a)(1) of the ESA mandates all federal agencies to "affirmatively conserve" and recover endangered species. The State of Louisiana is not convinced that the proposed leasing schedule meets the requirements of the ESA with regards to the Kemp's Ridley Turtle. What is the recovery plan for the Kemp's Ridley, for this proposed sale and previous sales? What are the quantitative estimates of present populations and the methods used to derive quantitative estimates of the impacted population and individuals impacts? In the absence of such quantitative information, we must assume that irreparable damage to this endangered species is possible. The State of Louisiana is committed to protecting endangered species and requires extensive discussions with the DOl to discern the if the MMS is "affirmatively conserving" the Kemp's Ridley turtle and its habitat.

E. References

Baumann, R. H. and R. E. Turner 1990. Direct impacts of outer continental shelf activities on wetland loss in the central Gulf of Mexico. Environmental Geology and Water Resources 15:189-198.

Cahoon, D. R. and R. E. Turner 1989. Accretion and canal impacts in a rapidly subsiding wetland. II. Feldspar marker horizon technique. Estuaries 12:260-268.

Costanza, R., S. Farber, and J. Maxwell 1989. Valuation and management of wetland ecosystem. Ecol. Economics.

Farrow, J. S. with J. Broadus (et al.). 1990. Managing the Outer Continental Shelf Lands: Oceans of Controversy. Taylor and Francis, New York, 1990.

Harris, W. M. and L. Thurston. 1989. Federal Offshore Statistics: 1987. U.S. Department Interior, Minerals Management Service. OCS Report MMS 89-0058.

National Research Council, 1990. The Adequacy of Environmental Information.

Swenson, E. M. and R. E. Turner. 1987. Spoil banks: Effects on a coastal marsh water level regime. Estuarine, Coastal and Shelf Science 24:599-609.

Turner, R. E. and D. R. Cahoon (editors). 1987. Causes of Wetland Loss in the Coastal Central Gulf of Mexico. Vol 1: Executive Summary; Vol. 2: Technical Narrative. Vol 3: Appendices. Final report submitted to Minerals Management Service, New Orleans, LA. Contract No. 14-12-001-30252. OCS Study/MMS 87-0119. 536 pp..

Turner, R. E. and Y. S. Rao 1990. Relationships between wetland fragmentation and recent hydrologic changes in a deltaic coast. Estuaries 13:272-281.

Appendix 1. An Interpretation of MMS estimates of wetland losses for a recent sale (131 and 135)

- Wetland loss is going to be significant, as documented in the EIS. Page xxxvi (135); and xxxv (131), concludes that there are 'low or very low impacts' of the lease sale on wetlands, depending on whether it is the base or high scenario; the definition is of terms is very important here. Page xxxviii defines 'low' as " than 0.05%/yr or 200 ha yr, whichever is less" and very low as "Less than 0.025%/yr or 100 ha/yr, whichever quantity is less".

Conversions:
1 ha = 2.47 acres

1 sq. mi = 640 acres

Very Low Wetland Impacts: If one assumes that 'very low' is 100 ha/yr, then that is equivalent to 0.39 square miles per year over the life of the project. The life of the project is at least 39 years for discovery and production (pg. IV-41), so that the estimated impact is 15.05 square miles of wetland loss.

A second estimate of impact is 0.025% annually, which must be compared to the estimate of total cumulative impacts of 0.05%/yr. In other words, MMS seems to estimate that the base impacts are about 0.025%/0.05%, or 50% of the total wetland losses.

The following calculations are informative to discern what MMS means when they define impacts: (1,186,000 ha)/5 = aprox. area in 1978 of Chenier Plain wetlands, the most likely area of impacts, and excluding likely impacts elsewhere (the transportation is also in the deltaic plain). At 0.025%/yr, this is 59.3 ha/yr, or 8.9 square miles of wetland loss over the 39 year life of the project.

Low Wetland Impacts: The estimates of 'low' are twice that of the estimation of 'very low'. Two additional alternatives are: 30.1 and 17.8 square miles/yr.

Summary of MMS
Wetland Loss Estimates
(Square Miles)

	"Very Low"	"Low"
Alternative 1 (100 or 200 ha/y)	15.05	30.1
Alternative 2 (0.025 or 0.05%/y)	8.9	17.8

- the above wetland losses accumulate over 39 years, with each year accumulating a higher impact value, as each year the lost value accumulates forward. Some of the losses are carried forward into the future for an indefinite term at an additional continuing additional cumulative loss.

- A commercial and recreational fisheries value is about $1,000 per acre annually. Other values from the DOI/MMS, *Five Year Leasing Program*, Appendix G, are on a cost-basis $11,611 to $58,280/acre. Estimates of dollar equivalents can be extrapolated from the above ranges (8.9 to 30.1 squares miles) as:

Dollar Value of Wetland Losses
Estimated by MMS
(Million 1991 Dollars)

Annual Fisheries losses	
Cumulative for 39 years	113.9 - 385.3
For each year thereafter	5.7 - 19.2
Cost Basis (all services)	$66.1 - 1,123

Note: The Base Scenario in Table S-6 states under the definition of "Low" that significant impacts will occur: - "but significant amounts of temporary dieback of wetlands vegetation lasting for 2 to 3 years."

Definitions used:

pg xxxix, Table S-6 "Definitions Assumed in Impact Assessment"
Wetlands, Moderate - "Either 0.05%/yr of the habitat or 200 ha/yr, whichever quantity is less, are permanently converted to other habitat types or degraded to the extent that there is impairment of wetland functioning within the ecosystem."

Wetlands, Low - "Less than 0.05%/yr or 200 ha/yr, whichever quantity is less, permanent loss of wetland habitat occurs but significant amounts of temporary dieback of wetlands vegetation lasting for 2 to 3 years."

Wetlands, Very Low - "Less than 0.025%/yr or 100 ha/yr, whichever quantity is less, permanent loss of wetland occurs. Minor amounts of temporary dieback of wetlands vegetation lasting for 2 or 3 years."

Appendix 2. Examples of Alternatives for MMS to address concerns by Louisiana.

•Avoidance of Proposed Lease Sale Impacts
- no sale;
- slower and steadier development of areas, so as to require better planning in a country with only 4% of the global reserves of oil and gas, and >90% is in this area;

•Reduction of Proposed Lease Sale Impacts if Implemented
- oil spill impacts are likely; therefore, improved prevention, treatment, and recovery procedures will result in fewer impacts;
- wetland impacts of onshore facility development can be reduced with better planning, increased understanding of impacts, etc.;
- improved predictive capability of oceanic environmental stresses

•Mitigation of Proposed Lease Sale Impacts if Implemented
- address what is equivalent 'mitigation';
- appropriate alternatives can be developed;

•Restoration of Proposed Lease Sale Impacts if Implemented
- improved long-term restoration of past impacts, through, for example, spoil bank management, sediment fencing, etc.;

•Restoration of Impacts from Previous Lease Sales
- produced water sites;
- pipeline corridors;
- navigation channels (e.g. Houma Navigation Channel);

•Improvements in Methodologies for Avoiding, Mitigating and Restoring Impacts
- LSU (the state's flagship university), LUMCON (the state's marine consortium) and other interested academics, various federal agencies (EPA Gulf of Mexico Program, National Marine Fisheries Service, US Fish and Wildlife Service, etc. could benefit from improved expansion of long-term funding;
- demonstration projects, documentation of ecologic processes leading to impacts, and basis for restoration over long-term;
- improvement in understanding of offshore environments, particularly predictive models of individual and ecosystem components

MARYLAND *Office of Planning*

William Donald Schaefer
Governor

Ronald M. Kreitner
Director

December 4, 1991

Ms. Debra Purvis
Environmental Projects Coordination
Branch
Minerals Management Service
Herndon, VA 22070

SUBJECT: REVIEW AND RECOMMENDATION

State Application Identifier: MD910806-0763

Applicant: U.S. Department of the Interior/Minerals Management Service

Description: Draft EIS - OCS Gas and Oil Resource Management Comprehensive Program - 1992-1997

Location: Atlantic Ocean

Approving Authority: U.S. Department of the Interior

Dear Ms. Purvis:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 14.24.04, the State Clearinghouse has coordinated the intergovernmental review of the referenced project.

All directly affected State, regional and local public officials were provided notice of the project and review comments were requested from the following:

The Department of Natural Resources, Maryland Department of the Environment, Department of Economic and Employment Development, Worcester County, Town of Ocean City, and the Maryland Office of Planning.

The following comments are provided for your consideration:

In accordance with 16 U.S.C. 1456, Section 307, the Department of Natural Resources' Tidewater Administration has determined that the

301 West Preston Street • Baltimore, Maryland 21201-2365
State Clearinghouse: (301) 225-4490 Fax: 225-4480 TTY: 383-7555

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project is located within the coastal zone and is not inconsistent with the Maryland Coastal Zone Management Program. The Department added the attached comments addressing issues related to alternatives scheduling, block selection, adequacy of information and other matters.

The Department of the Environment's attached comments address air quality, spill impact and response, need, energy conservation, water quality and habitat protection.

The Town of Ocean City and Worcester County, in their attached letters, expressed strong concern about any activities that might adversely affect the areas tourist industry. They both expressed opposition to offshore drilling in the Mid-Atlantic area as being incompatible with their local plans and policies.

We appreciate your attention to the intergovernmental review process and look forward to continued cooperation.

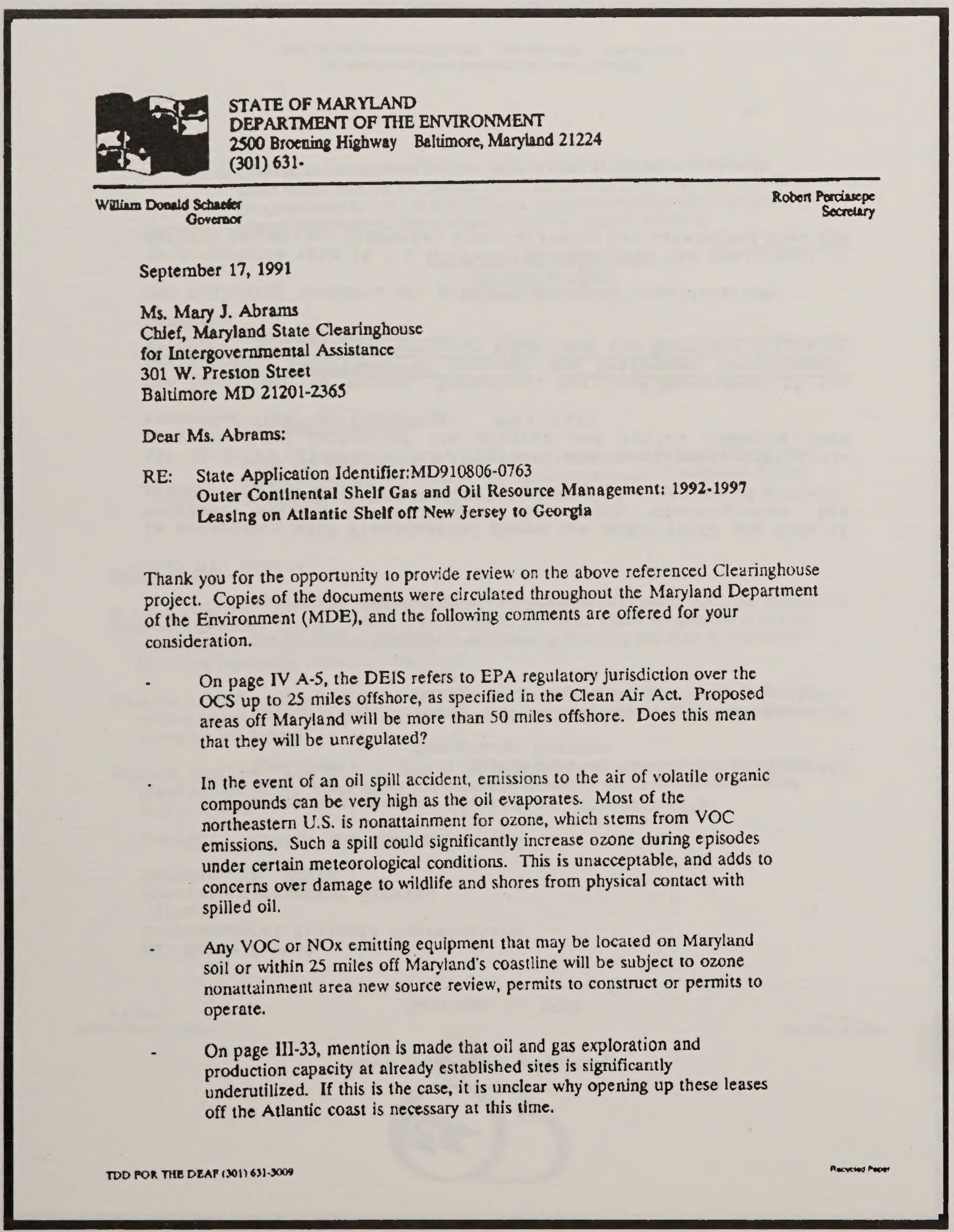
Sincerely,

Mary J. Abrams
Chief, Maryland State Clearinghouse
for Intergovernmental Assistance

MJA:LSF:mp

Attachments

cc: Dunbar - DNR
Brown - MDE
English - OP
Sheafor - OP
Middleton - DEED
Yankus - WRCS
Dare - Town of Ocean City
Weaver - DNR/MGS



STATE OF MARYLAND
DEPARTMENT OF THE ENVIRONMENT
2500 Broening Highway Baltimore, Maryland 21224
(301) 631-

William Donald Schaefer
Governor

Robert Perciasepe
Secretary

September 17, 1991

Ms. Mary J. Abrams
Chief, Maryland State Clearinghouse
for Intergovernmental Assistance
301 W. Preston Street
Baltimore MD 21201-2365

Dear Ms. Abrams:

RE: State Application Identifier:MD910806-0763
Outer Continental Shelf Gas and Oil Resource Management: 1992-1997
Leasing on Atlantic Shelf off New Jersey to Georgia

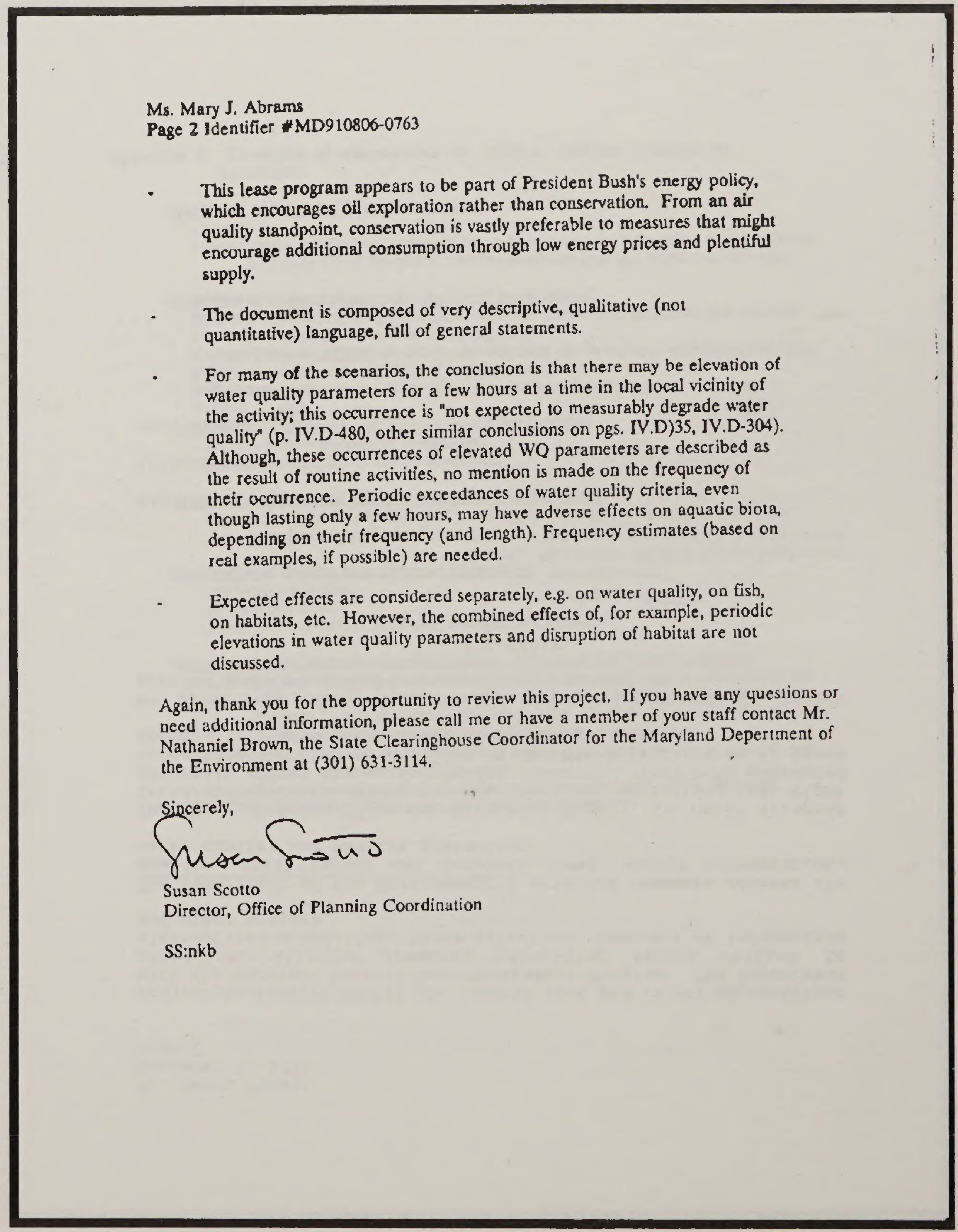
Thank you for the opportunity to provide review on the above referenced Clearinghouse project. Copies of the documents were circulated throughout the Maryland Department of the Environment (MDE), and the following comments are offered for your consideration.

- On page IV A-5, the DEIS refers to EPA regulatory jurisdiction over the OCS up to 25 miles offshore, as specified in the Clean Air Act. Proposed areas off Maryland will be more than 50 miles offshore. Does this mean that they will be unregulated?

- In the event of an oil spill accident, emissions to the air of volatile organic compounds can be very high as the oil evaporates. Most of the northeastern U.S. is nonattainment for ozone, which stems from VOC emissions. Such a spill could significantly increase ozone during episodes under certain meteorological conditions. This is unacceptable, and adds to concerns over damage to wildlife and shores from physical contact with spilled oil.

- Any VOC or NOx emitting equipment that may be located on Maryland soil or within 25 miles off Maryland's coastline will be subject to ozone nonattainment area new source review, permits to construct or permits to operate.

- On page III-33, mention is made that oil and gas exploration and production capacity at already established sites is significantly underutilized. If this is the case, it is unclear why opening up these leases off the Atlantic coast is necessary at this time.



- This lease program appears to be part of President Bush's energy policy, which encourages oil exploration rather than conservation. From an air quality standpoint, conservation is vastly preferable to measures that might encourage additional consumption through low energy prices and plentiful supply.

- The document is composed of very descriptive, qualitative (not quantitative) language, full of general statements.

- For many of the scenarios, the conclusion is that there may be elevation of water quality parameters for a few hours at a time in the local vicinity of the activity; this occurrence is "not expected to measurably degrade water quality" (p. IV.D-480, other similar conclusions on pgs. IV.D)35, IV.D-304). Although, these occurrences of elevated WQ parameters are described as the result of routine activities, no mention is made on the frequency of their occurrence. Periodic exceedances of water quality criteria, even though lasting only a few hours, may have adverse effects on aquatic biota, depending on their frequency (and length). Frequency estimates (based on real examples, if possible) are needed.

- Expected effects are considered separately, e.g. on water quality, on fish, on habitats, etc. However, the combined effects of, for example, periodic elevations in water quality parameters and disruption of habitat are not discussed.

Again, thank you for the opportunity to review this project. If you have any questions or need additional information, please call me or have a member of your staff contact Mr. Nathaniel Brown, the State Clearinghouse Coordinator for the Maryland Depertment of the Environment at (301) 631-3114.

Sincerely,

Susan Scotto

Susan Scotto
Director, Office of Planning Coordination

SS:nkb

New York State Department of Environmental Conservation
Division of Mineral Resources - Room 202
50 Wolf Road, Albany, New York 12233-6500
Telephone: (518) 457-9337

Thomas C. Jorling
Commissioner

October 28, 1991

Mr. S. Scott Sewell
Director
Minerals Management Service (MS-4013)
1849 C Street, N.W.
Washington, DC 20240

Dear Mr. Sewell:

Governor Cuomo has asked me to respond to your request for comments on the Proposed Comprehensive Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program for 1992-1997.

Both New York State and Suffolk County greatly appreciate MMS's decision to delete all tracts north of the 40° latitude line from the 5-Year Program. Restricting leasing to south of this line helps eliminate many of New York State's concerns about the nearshore environmental, social and economic impacts of OCS oil and gas development. We also appreciate the advance restrictions on the size of lease sales at this early stage.

Even with a reduced review area, preparation of useful comments takes significant staff time. We feel strongly that coastal states should, at a minimum, be reimbursed for their reasonable costs of responding to actions proposed for the OCS. We are pleased that the administration is proposing coastal impact assistance legislation to aid both state and local governments.

We greatly appreciate the degree of flexibility that MMS has shown in designing the Proposed 5-Year Program. In return, New York has also tried to be flexible and consider new alternatives that might achieve both state and federal goals. The attached staff comments address issues raised in the August 1, 1991 Federal Register Notice, the Secretarial Issue Document (SID), the 2 volume Draft Environmental Impact Statement (DEIS), and the Summary and Decision report.

We appreciate the opportunity to participate in the federal leasing process and look forward to your cooperation in the future.

Sincerely,

Gregory H. Sovas
Director
Division of Mineral Resources

Attachment

New York State Department of Environmental Conservation
Staff Comments on the

July 1991
Proposed Comprehensive Outer Continental Shelf
Natural Gas and Oil Resource Management Program for 1992-1997

I. PROCEDURAL ISSUES

A. Proposed Notice of Sale/Section 19 Review

New York remains concerned about the timing of the Proposed Notice of Sale (PNOS) and the Governor's Section 19 Review. In the existing 1987-1992 5-Year Program, the PNOS is not issued until after the Final Environmental Impact Statement (FEIS) is completed. This arrangement guarantees the Governor's Section 19 comments will be made on the final version of the lease sale's size, timing and location.

MMS has proposed issuing the PNOS much earlier, at approximately the same time as the Draft Environmental Impact Statement (DEIS). The PNOS would be prepared without benefit of the detailed comments on the DEIS from states, local governments, environmental groups and industry. Preparation of the PNOS and DEIS at the same time implies that MMS has already decided what to offer for sale before receiving important input from interested parties.

We recognize that the new Area Evaluation and Decision Process (AEDP) provides unprecedented opportunity for early input from affected states and other interested parties in defining the terms and location of a lease sale. However, we believe MMS will still receive substantive new comments at the DEIS stage. Even for active players, the publication of the DEIS will be the first opportunity to thoroughly review a document containing every aspect of the proposal, the alternatives and the potential impacts in detail. With the comprehensive overview that a DEIS provides, reviewers may have new thoughts and insights.

New York strongly recommends that MMS evaluate the comments on the DEIS before issuing the PNOS. If the PNOS is issued at the same time as the DEIS, a Supplemental Section 19 Review may be necessary for significant changes in the proposed size, timing or location of a lease sale.

B. Consistency Review

MMS's proposal to issue the Consistency Determination at the same time as the FEIS and 90 days before the Final Notice of Sale appears to be acceptable. The New York State Department of State (DOS) is the agency responsible for reviewing the consistency of proposed actions with New York State's Coastal Management Program (CMP). DOS has asked us to alert all involved agencies and organizations that should any OCS oil and gas lease sales or exploration and development activities take place in the future in areas of the Mid-Atlantic or North Atlantic region off New York State's coast, they would be subject to DOS's review for consistency with the CMP.

DOS has expressed strong reservations to DEC about OCS oil and gas activities within 50 miles of the Long Island shoreline. DOS's position is based on a number of factors including:

- the sensitive marine habitats and valuable recreational features of Long Island's shoreline;
- the already reduced water quality of the New York Bight and the large population concentration in nearby coastal New York and New Jersey;
- the significant marine commercial activity and the large number of ships entering and leaving the Port of New York; and
- the potential that the economic benefits attributable to offshore development will be exceeded by the combined costs of: 1) running the OCS Program, 2) providing public services required by OCS development, and 3) ameliorating potential and actual environmental degradation.

These issues will undoubtedly be raised in DOS's consistency review of any future leasing, exploration or development activities proposed for the Mid or North Atlantic region off New York State's coast.

C. Sale Frequency

To spur industry investment in offshore exploration and development, New York continues to support an environmentally sound leasing program with a schedule industry can depend on. We have already stated the proposed 1994/1997 schedule for the Mid/South Atlantic lease sales is acceptable. In reviewing the Secretarial Issue Document (SID), however, we noted five companies requested a change in the Atlantic sale dates to avoid overlap with the 1994 and 1997 Eastern Gulf sales. If MMS believes it could significantly improve the level of industry participation, New York is willing to consider moving the second Atlantic sale to 1996. Given the money and effort spent on lease sale planning and review, adequate industry participation is important.

II. ENVIRONMENTAL ISSUES

A. Atlantic Strike Force

New York is very pleased to learn that the new National Strike Force Coordination Center in North Carolina will be in operation for over three years before the first Mid/South Atlantic lease sale. This information could be added to Volume 2 of the DEIS, Appendix D on Oil Spill Response Capabilities for Offshore Oil and Gas Operations.

B. Submarine Canyons

The DEIS on the 5-Year Program acknowledges that the proposed action will probably cause alteration of submarine canyons and a decline in abundance and/or distribution of canyon species. Because of their environmental sensitivity and commercial fishery value, New York has long supported deletion of canyon areas from individual lease sales. However, we are uncertain whether the specific canyon blocks covered in deletion Alternative VI are truly the most crucial to New York fisherman. The issue is important since tilefish, a predominantly canyon dwelling species, accounts for a major portion of the value of finfish landed at New York commercial markets.

New York appreciates inclusion of the canyon deletion alternative in the 5-Year Program, but we will delay making tract specific deletion recommendations until the early planning stages for individual lease sales. Since MMS has already made the block maps available, we will request more up-to-date information from the Long Island fishing community and DEC's Division of Marine Resources. We will forward any new information we receive as soon as it becomes available.

C. Biological Resources Stipulation

The relatively low impacts generally projected for the 5-Year Program often hinge on the assumed use of a Biological Resources Stipulation. New York strongly supports inclusion of this stipulation in all Mid/South Atlantic sales. The stipulation should apply both to threatened/endangered species and productive habitats containing species important to commercial or recreational fisheries.

The DEIS recognizes that current knowledge on the importance of canyons to fishery resources suffers from inadequate sampling techniques. Therefore, we recommend that MMS also consider applying the Biological Resources Stipulation to any canyon tracts that may be retained in a Mid/South Atlantic sale. Input from the Mid-Atlantic Biological Task Force should be helpful in determining which tracts should carry the Biological Resources Stipulation.

D. Human Behavior and Activity

The short section on factors affecting risk perception and the range of resulting behaviors was very interesting. This is an area everyone in government needs to understand better. It is particularly important in the controversial OCS Program.

III. ECONOMIC AND ENERGY ISSUES

A. Costs and Benefits

On page 15 of the SID, the figure of $93.5 billion is given as the income generated for the United States through cash bonuses, royalties, and rentals up through the end of 1989. To put this figure in better perspective, the costs to the Federal government over the years should also be stated.

B. Energy Terminology

The Summary and Decision document is probably more widely read than the much lengthier SID and DEIS. To assist the general public in quickly reviewing the document, it would be best to avoid frequent changes in terminology. For example, on page 9 predictions for future oil production via advanced technology, development in the coastal plain of the Arctic National Wildlife Refuge, and development of the OCS are given in million barrels while present and predicted future oil production in relation to oil imports are discussed in percentage terms on the previous page.

To clear up ambiguities, all production figures, (present and future, domestic and imported) should be in comparable units and probably set forth in a table or tables. Also, a table showing anticipated production from advanced technology, the Arctic National Wildlife Refuge, and the OCS would be helpful in giving the general public an easily understandable overview.

OCT 29 4 55 PM '91

North Carolina
Department of Administration

James G. Martin, Governor
James S. Lofton, Secretary

Outer Continental Shelf Office
Donna D. Moffitt, Director

October 28, 1991

Hon. S. Scott Sewell, Director
Minerals Management Service
1849 C Street, NW
Washington, D.C. 20240

OCS Comprehensive Program

Dear Mr. Sewell:

Please find enclosed the State of North Carolina's comments on the Five-Year Comprehensive Program. We are enclosing a copy of our comments on the DEIS for your ready reference and because some comments refer to both the program document and the DEIS.

We appreciate staff from MMS visiting North Carolina twice in an attempt to address our concerns and issues. We are particularly pleased that two areas of greatest concern to us -- social costs based on national foreign oil back-out computations instead of regional computations and failure to incorporate non-use values in determining social costs -- are being revised for future decision documents. As indicated in our attached comments, however, the timing of the availability of the revised information may be a problem.

North Carolina continues to oppose the proposed program as long as leasing is scheduled off the coast of North Carolina. The issues raised in Governor Martin's letter to Barry Williamson of April 24, 1991, concerning (1) the unbalanced approach to information gathering and leasing, and (2) the inadequate information and time to enable either MMS or North Carolina to determine the impacts of proposed leasing off the North Carolina coast have not been answered. In fact, the preliminary recommendations of the North Carolina Environmental Sciences Review Panel indicate that additional information should be gathered before **any** phase of oil and gas activities occurs on the North Carolina OCS.

Thank you for the opportunity to comment and we will closely follow future developments of the program.

Sincerely,

Donna D. Moffitt

Donna D. Moffitt

Attachments

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State Courier 51-01-00

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COMMENTS OF THE STATE OF NORTH CAROLINA ON THE PROPOSED COMPREHENSIVE OCS NATURAL GAS AND OIL RESOURCE MANAGEMENT PROGRAM, 1992-1997

These comments are provided on behalf of Governor James G. Martin pursuant to the authority contained in the Outer Continental Shelf Lands Act (OCSLA), Section 18. The state has reviewed the primary and supporting documents to the best of its ability in the limited time available. The 90-day review period was wholly inadequate for reviewing hundreds of pages of the Secretarial Decision Document, the draft EIS, and several background documents. The background documents had to be specifically requested from MMS and they arrived well into the review period. The lack of sufficient time resulted in a less thorough review than might otherwise have been the case. Therefore, we are pleased that MMS staff were able to give assurances to state representatives at a meeting on October 22, 1991, that our comments and concerns would be taken into consideration throughout the upcoming phases.

Unfortunately, the Secretarial Decision Document does not detail the secretarial decision process -- specifically, how this information, the future EIS, and outside comments will be weighed and balanced. Numerous references to other publications and future consultations about the final leasing decision process add to the confusion. The information presented in the document and appendices fails to justify the selective leasing proposals for the Atlantic.

Because MMS held just one public hearing for the entire Mid and South Atlantic, the state's OCS Office held public meetings in Manteo and Beaufort, North Carolina, to accept additional comments and answer questions from the public. A summary of those meetings is attached as Attachment 2.

Comments are also enclosed from the Department of Environment, Health, and Natural Resources as Attachment 3.

Also enclosed are four news articles regarding the viability of the present U.S. natural gas market. They are Attachment 4.

The State of North Carolina continues to oppose the proposed program as long as leasing is scheduled off the coast of North Carolina. The issues raised in Governor Martin's letter to Barry Williamson of April 24, 1991, concerning (1) the unbalanced approach to information gathering and leasing, and (2) the inadequate information and time to enable either MMS or North Carolina to determine the impacts of proposed leasing off the North Carolina coast have not been answered. In fact, the preliminary recommendations of the North Carolina Environmental Sciences Review Panel indicate that additional information will be needed before **any** phase of oil and gas activities should occur on the North Carolina OCS.

The proposed 5-year leasing program and accompanying DEIS give the strong impression of being written to support a predetermined outcome. In reviewing all of the above mentioned documents, the National Energy Strategy, and other relevant material, we conclude that: (1) OCS drilling will not make the United States energy independent; (2) OCS drilling will not reduce tanker traffic; (3) Other energy measures have not received, but need, a fair comparison against OCS energy resources; (4) Natural gas is plentiful and cheap so there is no need to rush into leasing in gas-prone areas with insufficient information; (5) There is insufficient industry interest in the Mid and South Atlantic to schedule lease sales in those regions; (6) There is inadequate socioeconomic, scientific, oceanographic, and geologic information off the North Carolina coast to schedule lease sales; (7) North Carolina's coastal resources are critical to the state's economy and its coastal environment is a national treasure. These factors have not been properly considered in MMS's cost/benefit analysis; (8) North Carolina is not receiving equitable treatment under Section 18 of the OCSLA.

Secretarial Decision Document

Information and Data. The disparity in levels of comparative information is quite apparent. The proposed program goes into great detail when estimating benefits. These figures are based on information gathered at the level of the individual drilling company. If MMS can gather data at this level to estimate benefits, then the agency should be able to gather information at a similar level to estimate costs. The methodology in the proposed program categorizes costs as regional. However, no information is provided or apparently collected to shed light on the distribution of costs within the region. The detailed data collected for estimating benefits should also be collected for estimating costs.

Costs are generally underestimated in the Decision Document. In some instances, costs are explicitly omitted. Examples are non-use values, which are addressed in the discussion on Appendices 7 and 8, and potential effects of operational discharges, noise, air emissions, and habitat alteration. These omissions in the environmental cost calculations result in greatly underestimated costs. Stating that these impacts are analyzed in the programmatic EIS and the lease sale EIS (p. 72) does not guarantee their consideration.

While MMS focuses heavily on the balancing of OCS benefits, it virtually ignores the OCSLA requirement of "equitable sharing of **risks**." MMS states that "there are established mechanisms for compensating certain losses related to the OCS program... and ... stronger administrative measures may be taken with respect to certain OCS areas and activities to further reduce environmental risks and achieve more equitable sharing" (p. 85). What are these established mechanisms and stronger administrative measures?

The intent of President Bush's June 26, 1990, statement that "adequate scientific and technical information regarding the resource potential of each area considered for leasing ... must be available ... before decisions are made" is violated by MMS's proposed 5-year program. MMS proposes to offer for leasing the Mid and South Atlantic, an area it acknowledges "has yet to undergo any comprehensive studies designed to acquire data useful to evaluating the oil and natural gas resource potential" (p. 110). MMS also states that "additional seismic data would be useful for the Carolina trough," which is the area of primary focus in the Atlantic (p. 142). To what extent is MMS currently filling these data gaps? MMS cannot accurately analyze benefits to the nation from unknown resources given this acknowledged data gap. How were the blocks chosen for the proposed program given these data constraints? Neither the program nor the DEIS explains why the Mid and South Atlantic sales have been combined, or how the 250 blocks under the cap will be selected.

MMS makes many statements as if they were fact but provides no substantiation. Some examples follow:

(1) The agency claims that if EPA's moderate cost estimate for new source performance standards for the offshore oil and gas extraction limitations proves true, there will be a considerable impact on both the offshore industry and the country (p. 47). There is no data on the impacts to the country as a whole. Nor does MMS attempt to analyze whether there might be considerable **benefits** to the country by having cleaner nearshore waters and healthier marine life.

(2) The reference to the transfer of $150 million of OCS revenues to the Historic Preservation Fund for use by state and local governments is misleading (p. 83). In the last five years, Congress has made available at most $28 million per year to all 50 states combined, retaining the rest to help reduce the federal budget deficit.

(3) There is absolutely no basis for the assumption that the value of hydrocarbon resources will be reduced due to delay in leasing (p. 92). This statement is contrary to App. 7, which says that "the future value of the unleased resources are not calculated ..." (p. 7-61). Economic theory holds that the scarcer a product, the higher its price.

(4) The statements under Option 3 (option 4 in the DEIS) are not supported by the facts. The claim is made that if the Mid and South Atlantic, Southern California, and Eastern Gulf of Mexico are excluded from the 5-year program, the "resources not leased could very well never be offered again" (p. 136). This

admitted fear by MMS reveals that the agency is **already** opposed to considering alternatives to the proposed program. Nor is the statement supported by past experience; no sales were held in the Atlantic during the last 5-year planning phase, yet this area is again under consideration in the proposed program. MMS's statement also implies that the areas under the present 10-year moratorium will not be offered again. The entire OCS program cannot be run on the backs of Alaska, North Carolina and the Gulf of Mexico.

(5) By lumping the entire Mid and South Atlantic into the descriptive discussion, statements are made that are totally untrue for North Carolina. For example, the statement that "the population along the Atlantic coast tends to be dense and diverse with an established supporting infrastructure" (p. 155) is simply wrong for North Carolina, where the majority of leases may be offered, as well as for South Carolina and Georgia. Furthermore, this statement is contradicted in the DEIS.

Several sections explicitly or implicitly discuss missing data. North Carolina encourages MMS to work closely with coastal states to gather missing data, and to put it in a format that can be incorporated into geographic information systems.

The information analyzed in the regional discussions of environmental science does not justify leasing off North Carolina while other areas such as the North Atlantic are exempt. The section on relative marine productivity clearly shows that the Mid and South Atlantic have the highest value for productivity and sensitive marine environments in comparison to other OCS planning areas and the areas under moratoria. The South Atlantic has the highest primary productivity estimates (203,124,209 metric tons/yr.) and the Mid Atlantic has the second highest at 139,781,399 (p. 69).

MMS states that "site specific, species specific predictive information on the effects of hydrocarbons and trace elements relevant to possible OCS operations and the long-term impacts of habitat alteration on fish populations" is lacking (p. 157). MMS acknowledges that the area between 200-1,000 meters of depth is relatively unstudied in terms of chemical oceanography and water quality (p. 156). This, of course, is the area of focus in the Atlantic region for the proposed 5-year plan. Discussing the physical oceanographic background of the Atlantic (p. 153), MMS fails to state that sufficient descriptive information does not exist for the Mid-Atlantic. Nor does the document mention the physical oceanography panel created to review information north of Cape Hatteras, or its findings. Meteorologic measurements for the North and South Atlantic are discussed but the document is silent on the Mid-Atlantic. All of these acknowledged scientific information gaps underscore the need for more information on the Mid-Atlantic environment and ecosystem.

Much of the socioeconomic information referred to in the Regional Discussions section is 10-15 years old. Much of the East Coast has undergone vast changes in population patterns, growth and development since those studies were completed. The accuracy and validity of MMS's cost-benefit analysis is seriously undermined without updated information.

The discussion of the National Academy of Sciences' findings and recommendations (p. 149) is entirely too brief considering that these findings caused major changes in the OCS program. The program document needs to explain the findings, recommendations, and generic criticisms and describe how MMS intends to address them in the 5-year program.

The sections on sociology and community planning, economics, and visual and recreational resources should be rewritten after MMS reviews the Environmental Sciences Review Panel's recommendations. The discussion on proposed future directions (p. 156) is missing a major segment, i.e., the North Carolina ESRP and its findings in terms of MMS's future directions for North Carolina. The panel's preliminary findings and recommendations significantly contradict these sections. The text should be expanded to incorporate the panel's findings and recommendations.

Impact Assessment. The program document acknowledges that the "distribution of costs among the population tends to be skewed toward residents of coastal States" and that those people "are more likely to be adversely affected by OCS development..."(p. 84). Yet, the unequal treatment of data for the benefit-cost analysis (i.e., not indicating the distribution of costs) prevents even ball park assessments of impacts to local governments, primarily in rural, coastal communities. Of particular concern are the impacts on infrastructure and public services provided by local governments and the impacts on vital industries such as tourism and fishing. Regional level data masks the potential impacts to individual communities.

MMS seems to confuse cumulative vs. marginal impacts. The impact of any given offshore drilling operation may be small, but the cumulative impact of multiple operations in many lease blocks may be substantial. The comprehensive program and DEIS must deal with an analysis of cumulative effects. Analyzing cumulative effects is not analogous to analyzing regional effects. The distribution of benefits and costs within a region must be understood. Multiple drilling operations, having a cumulative effect, may impact one community or a few communities, resulting in a localized impact.

MMS overstates the benefits from OCS development through reduced impacts from spilled oil. MMS states that OCS exploration and development lead "more often" to the production of natural gas than oil (p. 85). The document than states the benefits of natural gas as reducing the potential for oil spills. MMS also constantly points out the excellent spill record for the U.S. OCS. If major spills are as uncommon as MMS continually asserts, then the potential environmental impacts of producing natural gas are really not much different than those from producing oil -- drilling discharges, chronic operational spills, air emissions, noise, etc.

MMS also contends that delaying drilling creates a (greater) risk of tanker spills (p. 98). According to the ICF, Inc. model, each OCS-produced barrel of oil reduces the need for imported oil by .86 barrel, and each barrel equivalent of OCS natural gas reduces the need for imported oil by .34 barrel. MMS uses these figures to demonstrate that imports produce a greater environmental risk from oil spills. The opposite could be true; there could be an even greater risk in some areas with drilling and tankering occurring simultaneously. In light of the Exxon Valdez spill, it is doubtful that foreign tankers have a substantially poorer safety record (by volume of spilled oil) than U.S. tankers.

Unfortunately, MMS does not believe that even the (potentially) largest natural gas discovery since Prudhoe Bay (the Manteo Prospect) will have significant socioeconomic effects on the Mid-Atlantic. However, MMS fails to present data to justify such a conclusion (p. 157-158).

Cost-Benefit Analyses. The whole analysis appears to affirm a predetermined decision of which areas should be leased and which should not. It is obvious that MMS placed the 26 planning areas into 3 categories (p. xix) before conducting its extensive cost-benefit analysis, an analysis which serves only to validate MMS's conclusions. North Carolina strongly objects to MMS's approach of conducting social cost analysis without factoring in such costs as noise, operational discharges, air emissions, etc., or non-use values for aesthetics or special concern for marine mammals and endangered species (p. xviii). Present research and methodologies now allow for such values to be quantified and economists routinely place value estimates on these commodities. If MMS limits the concept of net social value to environmental and socioeconomic effects that are judged to be monetarily quantifiable (p. 27), then the social costs are skewed considerably. Because the methodology eliminates significant costs, the net social value outputs become worthless. If MMS can estimate potential environmental costs and costs of potential regulations (p. 43), then it can estimate such non-market values as aesthetics and concern for marine mammals and endangered species?

At a recent meeting between MMS and North Carolina, MMS disclosed that non-use values were being developed for use in the final program. Since the final program will contain important new information, the state would like an opportunity to review the information and resulting analyses for longer than the typical 30-day review.

Sect. II.A.1, in general, is more candid and forthright than the draft version. Paragraph 2, page 7, does not discuss whether OCS oil and gas can currently (or for the next 5-year planning period) be leased, explored for, and produced cheaper than foreign imports. In order to fully understand the true cost-benefit for the Atlantic (or North Carolina), MMS should determine what the costs are per barrel for developing OCS resources in the Mid and South Atlantic. This is an important concept that North Carolina would like to see discussed. MMS touts the leasing revenues of $90 billion to the U.S. Treasury from the OCS since 1953 (pp. 7 and 15), but says nothing of the costs to acquire that $90 billion. The fact that MMS goes to great lengths to provide benefit figures while expending virtually no effort to determine and provide cost figures is a major shortcoming of MMS's analysis, and one which North Carolina highlighted in its comments on the draft program.

As we commented on the draft version, there is not enough oil in the OCS to affect alone the importation of foreign oil, contrary to statements and implications made by MMS. However, the program assumes (p. 49) that foreign oil will be substantially backed out by OCS development and that figure is used to reduce social costs. The backout methodology (p. 49) is poorly documented in App. 6 and it is extremely questionable that foreign oil backouts should be used to extensively negate social costs, especially in the Mid and South Atlantic. The decision document says that "the import backout computations deal only with oil spill costs" (p. 52). The DEIS says that very little imported oil comes into Atlantic ports (IV.D-760), and none into North Carolina; thus oil spill costs from imported oil would approach zero for the Atlantic. Yet, some social costs for the Mid-Atlantic are discounted up to 80% due to the import backouts. The claim that offshore operations allow one to subtract the oil spill costs from the regional costs because of the supposed back-out of foreign oil is unsupported. Furthermore, according to the DEIS, oil found in the Mid and South Atlantic will be tankered to shore, which would **increase** costs (p. IV.D-181 and IV.D-196). This appears to be a major flaw in the assumptions and computations. Fortunately, MMS recognizes this problem and assured state representatives at a meeting on October 22, 1991, that **regional** backout figures are being developed. However, regional figures may not be available until the lease sale stage. It is unclear to us how the Secretary can discharge his Section 18 responsibilities without this vital regional information for the five-year program.

MMS appears to have adopted a methodology that allows **regional** social costs to be subtracted from the **national** net economic value of production (p. 91). Under MMS's approach, the economic value is **always** going to be larger than the social costs.

Regional costs should be subtracted from regional benefits to arrive at net social value. By aggregating benefits and costs by region, the computation ignores the higher costs of offshore oil and gas activities to the adjacent onshore areas (Tables 18 and 19).

Even though an explanation was provided at the October 22 meeting, we still question why regulatory costs are factored into the estimation of net economic value as a potential cost of production rather than as a social cost (p. 27).

Section 18 Balancing. MMS says that it proposes a new comprehensive approach that, among other things, allows for "focusing on areas considered in the program, rather than those excluded from it" (p. xx). We believe this approach is not legally supported. Section 18(a)(2) requires that the oil and gas-bearing physiographic regions of the OCS be analyzed with respect to several listed factors. MMS has not done this, thereby depriving the Secretary and reviewers of a complete analysis. Section 18(a)(3) says that "the Secretary shall select the timing and location of leasing, to the maximum extent practicable, so as to obtain a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone." If the Secretary is provided with the required information for only half the OCS planning areas, he cannot make an informed choice. Since several viable OCS planning areas have been removed from the Secretary's deliberations for political reasons, then he cannot comply with the OCSLA. The Secretary should, therefore, withhold decisions on a five-year leasing plan until he can select from all viable OCS planning areas.

The approach in the proposed program whereby the secretary selects first those areas for leasing **before** looking at the required Section 18 factors (p. 31), violates the OCSLA. The secretary must consider the Section 18 factors for all planning areas before choosing what areas to lease. MMS indicates that the analytical requirements of Section 18 have been met in the Decision Document and the DEIS (p. 6). We strongly disagree that they have been met when the analysis is missing for half of the OCS planning areas. If some of those areas that would have been rated high for leasing have been eliminated for political reasons, then the secretary can state that he is unable to offer those areas in the next 5-year leasing phase. But to foreclose the information base prior to a balancing decision is not permitted by the OCSLA. All Section 18 factors must be analyzed for all OCS planning areas prior to the determination of which areas to lease.

It is wholly inadequate and unsupported by previous practice or law for MMS to rank only half the OCS regions in terms of net social values (p. 91). All regions must be ranked in order for the decision maker and reviewers to make informed decisions. Dicta from previous opinions on the OCS program are of little value in defending the present program. The reference to California II (p. 76), where the court found the 1982 program's equitable sharing analysis sufficient, is not reconcilable with the proposed program. The 1982 program considered all viable OCS planning areas for leasing; the proposed program eliminates four whole, viable planning areas and parts of two viable planning areas making equitable sharing impossible.

The areas proposed for leasing consideration in the 1992-1997 seem to be based on 2 criteria: that the area cannot be subject to the presidential moratorium and that industry must show some interest. The other Section 18 factors appear to have had minimal influence. For example, MMS says that all planning areas with the exception of St. Matthew-Hall have positive conditional economic value estimates (p. 35). Yet St. Matthew-Hall is not eliminated from leasing consideration because the industry expressed some interest. If industry interest is the overriding criteria, then the entire net social value computations could have been eliminated.

Quoting from California I, MMS states that "the timing of sales which best meets national energy needs is one which moves into the most valuable areas first, where value is calculated taking into account potential economic, social and environmental costs of oil and gas activity as described above" (p. 89). This opinion was reached on a program that included all viable OCS planning areas; the present program removes several viable planning areas before the Section 18 balancing analysis is applied. Finally, MMS implicitly acknowledges that the 10-year moratorium has skewed the Sect. 18 balancing requirements (p. 100).

No Present Need for Natural Gas Drilling or Leasing off North Carolina. North Carolina contends that drilling off its coast for natural gas or leasing additional gas-prone blocks is not warranted at this time. The nation has an abundant supply of natural gas and the information needed to make oil and gas decisions for offshore North Carolina is inadequate. The U.S.'s proven, recoverable OCS natural gas reserves (as of Dec. 31, 1989) amounted to 42.5 trillion cubic feet (p. 14). This amount is over 8 times what MMS says might exist in the Mid and South Atlantic. MMS should concentrate on recovering some of the 42.5 tcf **proven** reserves and eliminate the Mid and South Atlantic from leasing consideration for the present time.

Lack of sufficient oil resources is this country's main energy problem today. The NES indicates that "the energy future is one in which, except for oil, the U.S. is expected to be largely sufficient from a resource perspective" (p. 14). The DEIS echoes the NES's contention that "the basic vulnerability involves oil...." Then a list of required actions are provided, not one

of which is to drill for more natural gas on the OCS. If lack of domestic **oil** is the overriding problem, then the 5-year leasing plan cannot reduce our energy vulnerability by focusing on areas that are thought to be **gas**-prone.

MMS states that decreasing the amount of imported natural gas and oil will decrease the overall U.S. trade deficit and strengthen the U.S. economy (p. 15). This seems a rather simplistic and exaggerated view in light of the Energy Department's contention in the NES that "the evolution experienced in the last decade in the trade of oil on world commodity markets makes it infeasible to insulate the U.S. from the economic forces that drive global supply and demand patterns" (p. 76 of NES). The NES says that the U.S. will continue to be substantially dependent on Middle East oil for decades to come regardless of the energy strategy the U.S. adopts (p. 76), including increased OCS production.

MMS discusses the U.S. Department of Commerce's "The Effect of Crude Oil and Refined Petroleum Product Imports on the National Security, Under Section 232 of the Trade Expansion Act" (p. 10). Commerce found that exploration in ANWR and the OCS offer the most promising prospects for discovering major new oil reserves and that exploration and production from these areas would serve to limit our growing dependence on foreign oil. However, the OCS is supplying (and is projected to supply) only 5% of the domestic consumption of oil in this country; therefore, additional leasing in **gas** prone areas during the next 5-year planning phase cannot measurably contribute to reducing our dependency on foreign oil.

Production on the OCS has significantly declined since the early 1980s. MMS says that the decline can be attributed to 3 things: lower oil prices, moratoria on OCS leasing, and the dwindling reserve base in the U.S. (p. 12). North Carolina contends, as laid out in our draft comments, that low oil prices and the dwindling reserve base are the main reasons -- neither of which can be controlled by the U.S. or manipulated by the next 5-year leasing plan.

Four news articles are attached indicating the bleak outlook for natural gas due to over supply and low prices, increases in the U.S. natural gas reserve base, and the lack of interest by industry in gas-prone OCS areas (Attachment 4). If industry itself is shutting in production wells and the U.S. market cannot sustain OCS development of natural gas at this time, then national security cannot be an argument for drilling off the North Carolina coast. Further, it is highly questionable that so-called energy security benefits could make significant contributions to net economic values (p. 35).

For all the foregoing reasons, there is no need to rush into the next 5-year leasing phase, which primarily focuses on natural gas, until informational, equity, and impact assistance problems have been resolved.

Miscellaneous. In discussing energy conservation, MMS says that "any major government effort to impose a non-market solution to our energy problems will have very significant negative impacts on the economy" (p. 19). This completely ignores non-market incentives currently provided to the petroleum industry through low minimum bid requirements, tax credits, etc.

MMS states that only exploratory drilling can determine whether an area contains actual hydrocarbon reserves (p. 98). This is a false issue because the OCSLA does not permit a lessee to sit on its discovery; the law requires a lessee to use due diligence to produce whatever is discovered on the OCS. Also, commercial discovery inevitably leads to production; therefore, exploratory drilling is not as innocuous as MMS would have the reviewer believe. North Carolina would support a relaxation of the due diligence requirements as mentioned on p. 99.

The list of the related documents that will affect the secretary's decision (p. 4) should include the National Academy of Sciences' reports on Florida and California, on oceanography and ecology, and the North Carolina Environmental Sciences Review Panel's report.

Appendix 6. The entire tone is one of blind support of the OCS program to reach a predetermined conclusion that OCS drilling is good and that any other energy source or conservation is bad. However, the DEIS acknowledges that "Conservation ... results in essentially no impacts" (p. IV.D-671). The program analysis presented in this appendix relies heavily on the National Energy Strategy which has not been adopted by Congress and is not likely to be adopted in its present form.

App. 6-24. The draft program said that the "least cost" approach would be used to develop the new program (p. 45), yet the proposed program rejects this approach. Why?

App. 6-32. To continually describe the gross benefit figures from the OCS program without mentioning any costs of acquiring those benefits is misleading. Not factoring in the true costs of energy production has been criticized as preventing the true operation of a free energy market (see "The Real Cost of Energy," **Scientific American**, April 1991).

Appendices 7 and 8. Many preliminary comments have already been provided to MMS and there have been two meetings between MMS and North Carolina in which the information contained in these appendices was addressed. Therefore, we will rely primarily on the oral and written comments previously provided to MMS. Those

written comments are attached as Attachment 5 for your ready reference.

These two key appendices support the analysis in the Decision Document. These appendices come directly from two background documents that had to be specifically requested from MMS. These documents arrived well into the review period, resulting in a less thorough review. However, many of our questions about how information or data were derived and why certain assumptions were made were not answered.

In the view of this state and of our economic consultants, the methodology and figures grossly underestimate the social costs. It is obvious that conclusions were reached without the benefit of up-to-date socioeconomic information for North Carolina and probably for other Mid and South Atlantic states. The analysis of social costs appears to be little more than an analysis to support a predetermined conclusion. Critical information is missing, assumptions are unsupported, and discounting techniques are liberally applied. Furthermore, the socioeconomic data for all phases of OCS activities is the most inadequate of all the topic areas according to the N.C. Environmental Sciences Review Panel.

It appears that MMS's view of the components of the "marine, coastal and human environments" consist of factors on which MMS has readily available information. Other important areas, such as socio-cultural systems, employment, land use or tax systems, appear to be omitted, perhaps because MMS has not gathered data on these topics. Because all necessary information is not available to MMS, MMS's ability to assess costs is significantly limited and the net social values are unreasonably inflated.

To exclude some potentially real impacts of OCS activities because they may be funded by the Coastal Energy Impact Program is grossly misleading in view of the fact that this program has not been funded since 1982 or 1983.

The "net economic value" computation completely disregards the fact that a non-renewable resource base is being depleted. Nor does it include any of the consequential costs of developing fossil fuel energy. Also, no information is given in App. 7 on how large an Atlantic oil discovery must be before a pipeline can be justified.

App. 8-2. MMS states that certain types of costs are difficult to measure and have therefore been omitted. The claim is made that a value cannot be placed on marine mammals potentially killed by oil spills because, under the law, marine mammals have no market value since they cannot be bought and sold. This is a very narrow and unsupported interpretation of methods for valuing natural resources. Fortunately, MMS says that it will remedy this situation for the final program.

App. 8-5. MMS states that, "The focus of each 5-year OCS leasing program is a phased schedule of lease sales based primarily on evaluation of the net social value of prospective leased resources." Earlier in the document, MMS states that it conducted no comprehensive studies of hydrocarbon potential in the Atlantic. Without this information, MMS's "net social value" analysis and outcome for the Atlantic is unsupportable, and insufficient information is being provided to the Secretary. In addition, how are other factors such as non-use and non-market values, environmental assessments (e.g., DEIS), industry interest and information adequacy balanced in the program development as required by the OCSLA? MMS should discuss what level of information adequacy was used to justify a moratorium for those areas currently under drilling and leasing moratoria.

How can the net social (Table 8-II.1 and .2) and net regional values (Table 8-II.3) for the Mid and South Atlantic be significantly raised by import backouts? The import backout computation deals only with oil spill costs (p. 8-8) and no spills are assumed in the Atlantic region as a result of the importation of foreign oil to replace foregone OCS natural gas and oil in the Atlantic (DEIS, p. IV.D-760). No reduction of social costs should occur at all in the Atlantic due to foreign oil backouts.

App. 8-41. It is unclear why MMS adds the **producers'** (i.e., the private sector) regulatory control and substitution costs to the gross social costs, while other costs are either national or regional.

App. 8-47. The statement that "as a community adjusts to the existence of a facility or potential event, the perceived risk associated with oil spills would drop to zero" is unsupported with facts.

App. 8-53. MMS concludes that the greatest unit losses for social cost damages would be incurred in Southern California and the Mid-Atlantic OCS planning areas due to high "visitation" to these areas. This conclusion supports the need for socioeconomic studies on onshore impacts, which North Carolina has repeatedly requested.

App. 8-62. This discussion does not explain the assumption of aggressive habitat restoration as part of spill cleanup measures. These are two very different activities. Also, the conclusion is just plain wrong. Full restoration never happens and a two-year period for restoration is very short and undocumented. According to our consultants, option or existence values are **not** solely the measure of the long-term opportunity to use a resource.

Appendix 9. The conclusion to App. 9 (9-11) is enlightening and shows that MMS favors OCS production. MMS believes its mission is to (1) expedite exploration and development on the OCS; (2) achieve national economic and energy goals; (3) maintain a favorable balance of payments in world trade; (4) ensure a fair and equitable return on OCS resources; (5) preserve and maintain free enterprise competition; (6) promote national security; (7) reduce dependence on foreign sources; (8) enhance government receipts; (9) enhance orderly energy resource development; and last, balance energy development with protection of the human, marine, and coastal environment. Protection of the environment is almost an afterthought. Undoubtedly, MMS will point to the OCSLA as evidence for the 9 mission objectives listed above; however, the OCSLA contains just as many, if not more, references to environmental protection.

Appendix 10. This appendix closely follows the analysis of previous program EISs, but also incorporates more recent data on productivity. Overall the data presented, along with their limitations, do not support leasing off North Carolina when compared with other areas under moratoria. In the tables shown in 10-B, neither the Mid nor the South Atlantic have islands listed under coastal habitats. What qualifies as an island? In the sensitivity analysis, MMS includes important discussions of both habitat and wildlife. Unfortunately, MMS seems to believe this is redundant. To the contrary, these analyses are actually addressing **cumulative effects.**

Table 10-A-2 contains an error. The Pamlico Sound is listed as being in the South Atlantic; it is in the Mid Atlantic.

App. 10-A-22. It is unclear how or why MMS chooses to base environmental sensitivity almost entirely on sensitivity to crude oil spills, especially when natural gas makes up 75% of the OCS resources. MMS also chooses to leave effects of operational discharges, noise, air emissions, and habitat alteration out of the numerical environmental sensitivity calculations. Such omissions reduce the credibility of the analysis.

MMS defines environmental sensitivity in terms of:

1. the severity of damage resulting from the contact of spilled oil with various coastal and marine habitats and biota; and

2. the potential time required for the habitat or population to recover from the effects of contact with spilled oil.

The National Academy of Sciences says that MMS focuses too narrowly on oil spills and not enough on other potential impacts associated with development and production in the EISs for Florida and California. NAS also says that potential recovery rates of ecosystems after damage have been overestimated (p. 5 of Florida and California report). There is no evidence that MMS acknowledges these shortcomings or tries to address them in the proposed 5-year plan.

App. 10-A-24. We could find no definition of "coastal habitat" or "marine habitat" or the distinction between the two.

Editorial. There are many references mentioned in the Secretarial Decision Document that are not listed in the bibliography. Page numbers for tables are inconsistent with the table of contents.

The alternatives are numbered differently in the program documents than in the DEIS and are therefore confusing (see page 32 of the Summary and Decision and pages 133, 135, 136 of the Secretarial Decision Document).

The second full paragraph on page 85 has a portion missing.

All references to legal cases should refer to the legal reporter in which the opinion appears instead of the phrase "slip op" (e.g., pp. 25, 26, 90).

Table 17 (p. 78) is too far away from the text it is attempting to illustrate. Why isn't the Mid and South Atlantic ranked? There is no explanation of what specifically constitutes coastal habitats, marine habitats or marine biota.

The paragraph in the middle of page (87) has jumbled wording so it is hard to understand MMS's point.

All tables in the program document should show values for **all** OCS planning areas, just as the draft program did.

The discussion on narrowing areas of contention through analysis of industry search patterns was very informative (p. 116).

MMS refers to the MOU with North Carolina as if it is still active (p. 125). The agency needs to provide an update of the project. The MOU expired when North Carolina rendered its CZMA consistency decision on Mobil's exploration plan in November 1990.

Under "Deep Stratigraphic Test Drilling" (p. 147), the word "condemned" seems inappropriate. The section on background is well done.

Appendix 2, "Laws, Goals, and Policies of Affected States" appears to be only policies; there does not appear to be any laws or goals.

Draft Environmental Impact Statement

North Carolina supports Alternative IV, which excludes leasing off the Mid and South Atlantic. The state takes this position as long as states where leasing would occur are provided with promised impact assistance (see Fact Sheet on Presidential Decisions Concerning Oil and Gas Development on the Outer Continental Shelf, June 26, 1990). This position is also consistent with the president's statement: "Priority for development should be given to those areas with the greatest resource potential. Given the inexact nature of resource estimation, particularly offshore, priority should be given to those areas where earlier development has proven the existence of economically recoverable reserves." There is no concrete evidence that oil and gas exists off the North Carolina coast much less proven economically recoverable reserves.

It was impossible to review the volume of material contained in the DEIS and Proposed Program in just 90 days.

Information and Data. In the discussion of the contribution of OCS natural gas and oil production from the OCS (p. I-1), there is no mention of the United States' limited supply in relation to the world's supply of natural gas and oil. The caps proposed in the Secretarial Decision Document are not analyzed in the DEIS. How will they be selected and on what criteria?

There is only cursory coverage of fisheries displacement as a result of offshore and nearshore oil and gas structures and discharges. It is also disturbing that the DEIS overlooks the importance of significant and valuable **offshore** recreational and commercial fisheries off North Carolina. The DEIS fails to consider the losses in biological and fisheries productivity that may occur as a consequence of wetland losses due to OCS development. In general, wetlands impacts are poorly analyzed. The DEIS attempts to minimize OCS impacts by comparing them to other activities and exaggerating those impacts. The comprehensive OCS program cannot regulate or control other activities so the comparisons are irrelevant and are simply an attempt to divert the reader's attention from the issues at hand.

The Mid-Atlantic discussion on fish resources (p. III-189) should contain a description of the importance of Sargassum, particularly off the North Carolina coast, similar to the discussion about the South Atlantic. The DEIS needs to explain that there is no data from the Atlantic to support the idea that platforms would enhance offshore recreational fishing (p. IV.A-17). There is always lots of information on Gulf platforms and fish enhancement but nothing on Pacific platforms. What is the experience in the Pacific?

Although the DEIS claims that the effects of drilling discharges on fisheries and submarine canyons are minimal (p. IV.D-260), the president placed the North Atlantic under a 10-year drilling and leasing moratorium. MMS's assessment is not consistent with the president's action. In addition, this section should discuss the recommendation of the North Atlantic Submarine Canyons workshop that drilling be prohibited within 500 meters of a canyon. The section on Atlantic Region Impacts of Fisheries (p. IV.D-429) should contain comparisons to research in the North Atlantic (under moratorium) because similar research has not been conducted elsewhere along the Atlantic.

The affected environment section (p. III-182) should mention the Fish and Wildlife Service's consideration of designating the coastal population of bottle-nosed dolphins as an endangered/threatened species. This species is currently undergoing a status review and National Marine Fisheries Services is examining the possibility of classifying it as depleted under the Marine Mammal Protection Act. Also, all sections addressing birds should discuss the colonial nesting habits of many coastal bird species. Sea turtles are not absent off North Carolina as implied in this section (p. IV.D-387). NMFS's data and Sherry Epperly's review of MMS's environmental report on Mobil regarding turtles should be incorporated in this section.

We could not find a full description of the base and high cases. There are mentions of pipeline landfall communities and charts showing raw numbers, but no comprehensive descriptions of which communities might be involved and how they might be impacted, or where support bases, processing plants, or landfalls might be located.

There is conflicting information throughout the document involving employment opportunities. From our knowledge of employment trends, pages IV.D-238, 239 offer more defensible statements of employment opportunities. There would be a "relatively small number of jobs available for the local populace on exploratory and development rigs, and production platforms .... Drilling crews would come from outside the Atlantic states.... The increase in the number of jobs is not expected to add significantly to the existing economy." This contrasts markedly with statements on pages v, II-11, and IV.A-15 that local labor could fill the labor requirements. This contradiction needs to be reconciled.

The discussions of the socioeconomic environment (pp. III-200 to III-214 and later in section IV.D.1.) are so general as to be worthless. General descriptions of demography, employment, land use, etc. are simply a collection of facts without analysis. The DEIS fails to address issues surrounding impacts to the human environment because significant types of social and economic impacts have been ignored by MMS. MMS then attempts to discredit

(IV.B-3) the overwhelming opposition to the OCS program by claiming the opposition is simply not objective. This implies that MMS has the only objective position. The DEIS also erroneously attributes North Carolina's current opposition (IV.B-3) to exploration and leasing solely to "perceptions," rather than to logical reasoning. The DEIS cites the state's lack of objection to a 1982 exploration proposal as evidence that "perceptions" have altered the state's position on offshore drilling. The real reason for the change is that the state is more knowledgeable, more concerned, and better prepared than in 1982. This whole section is pseudo-social science without substantiation (and without bibliographic reference for most of the citations) and should be eliminated. Instead, MMS needs to acknowledge the data gaps and proceed with collecting and analyzing information on the human social and economic systems affected by OCS activities.

The section on generic impacts for the socioeconomic environment of coastal communities (p. IV.A-14) is missing discussions of significant importance. Specifically, there is no mention of how pipelines are permitted, how state and private property along the right-of-way is acquired, how land for processing plants is acquired, etc.

Impacts on coastal communities in the Atlantic region is of utmost concern to North Carolina and its citizens. Yet, just 5-1/2 pages (p. IV.D-238) are devoted to this analysis. The section on "Land Use" is very cursory and misses a major concern of local citizens -- eminent domain authority of oil and gas companies, and where rights-of-way and processing plants are likely to be located, etc. This section does not mention any informational gaps or problems with the analyses.

The preliminary conclusions of the N.C. ESRP are instructive for this topic. The following prelease socioeconomic studies were tentatively agreed to by the panel at its October 8th meeting: (a) Base Case Characterization Analysis -- This would include not only the standard aggregate data base analyses on such variables as population, employment, and economic activity, but also a characterization of relevant industries (e.g., fishing and leisure and tourism) and the relationships among private and public sector entities at all levels in the affected areas. Such analyses should take a "social systems" approach, rather than a simple listing of statistics. (b) Community Studies -- Detailed community studies should be done on the communities most likely to be affected by OCS development, similar to those done in other OCS areas. These studies should cover the range of socio-cultural variables necessary to a contextual understanding of the role and effect of potential OCS activities in these communities, including such variables as cultural traditions (i.e., occupational continuity or formal religious organization) and psychosocial conditions (i.e., mental health). (c) Prelease Aesthetic and Perceptual Issues -- Studies concerning perceptions of environmental conditions and values associated with potential OCS activities and their impacts should be performed for representative portions of the potentially affected populations prior to lease sale activity. This should include subjects such as perceived priority uses and values the environment and perceived risks of various OCS activities. (d) Infrastructure Issues -- Studies should be done on the potential infrastructural impacts of OCS development through all scenarios, including revenue sources, distribution of financial burdens, and socio-political variables affecting infrastructure development and use for all potentially affected areas. (e) Socioeconomic Monitoring -- Once the base case characterizations are established, socioeconomic variables (economic, socio-political, and socio-cultural) should be included as part of a comprehensive, longitudinal OCS monitoring program associated with specific exploration proposals.

The DEIS recognizes the importance of recreation and tourism along the Atlantic coast (p. III-214). Since tourism is so vital to this area, MMS should fund socioeconomic studies on the potential impacts to local economies in North Carolina from oil and gas activities.

Impact Assessment. The DEIS impact assessments are based on oil price stability, a fundamentally flawed concept. This approach allows MMS to avoid discussion of the effects of oil price instability on coastal communities that are going to be most affected by oil and gas activities. In general, we found all aspects of the information and assessments on coastal communities to be very weak and strongly urge MMS to begin gathering information to fill these data gaps.

Under "Impacts on Coastal Communities" for all scenarios, there should be some discussion of the potential conflicts between oil and gas activities and military activities. For all three scenarios, especially the "high" and "cumulative" cases, there should be some impacts to coastal habitats, coastal communities, and recreation and tourism from pipeline landfalls, yet these really aren't acknowledged or discussed in any detail. In the "high case," MMS assumes landfalls in Wilmington and Charleston -- two areas that are densely populated and heavily dependent on tourism. What are some anticipated impacts from pipeline construction activities and how could these impacts affect these two particular areas? And, even more so, why are these landfalls assumed? There should also be a generic discussion of the socioeconomic effects of accidental events (p. IV.A-49).

The statement about the lack of impacts on tourism and recreation due to state and federal reviews being able to direct pipelines away from areas important to tourism and recreation (p. IV.D-234) is pure conjecture. As MMS knows, the law is still unsettled as

to how much control state and local governments have over the landfalls and onshore routes of offshore pipelines. There are few areas in coastal North Carolina that could be crossed by a pipeline where tourism or recreation would not be impacted. The DEIS describes a "token" visual impact to Dare County's recreation and tourism (p. IV.D-286) but fails to discuss far more potentially serious visual impacts to recreation and tourism from pipeline landfalls, processing plants, supply yards, etc.

The assumptions for platforms, pipelines, wells and resources portrayed in Section IV are considerably different from the exploration and development scenarios in Mobil's exploration plan and MMS's environmental report. Mobil has commented that, due to technical and economic constraints, a resource in the Atlantic frontier area would need to be very large (e.g., 5 tcf of gas) to be commercially recoverable. The DEIS describes a scenario of only half that size. What accounts for the differences in these scenarios and was the Mobil scenario considered in the DEIS? In addition, the DEIS states that future OCS oil is assumed to be tankered in the Mid-Atlantic (IV.D-11 and IV.D-30). This also is at odds with the MMS's environmental report scenario. This needs clarification or reconciliation. Also, different sections within scenarios contain conflicting numbers of pipelines, wells and landfalls. Section IV.D. is missing important descriptions about whether pipelines can be located through national seashores, national parks or state parks, and, if so, under what conditions.

There have been no studies of radionuclides' impacts, yet MMS deduces from this lack of information that there must be no human or environmental problems (p. IV.A-26). This cannot be said with certainty for radionuclides in formation waters and MMS should not imply that there are no problems. Section IV.A should include a discussion and analysis of radionuclides from produced water discharged into nearshore and estuarine areas.

Often MMS deduces that no impacts will occur even in the face of no data, such as with radionuclides. Yet, there are instances where the document is very candid about what is not known. For example, in discussing toxicity, sublethal and chronic effects of muds and cuttings, MMS states that: (1) "there is no toxicity information on acute or lethal nor chronic or sublethal effects of muds and cuttings and formation water discharges on marine mammals, coastal and marine birds, and reptiles (turtles). Comprehensive reviews by NRC (1983), the EPA (1985), and Neff (1987) do not mention or attribute effects of these routine OCS oil and gas activity discharges on these groups of organisms (p. IV.A-30); and (2) "information on sublethal and chronic effects [from muds/cuttings and formation water from OCS oil and gas activities] is generally lacking" (p. IV.A-32). We agree with MMS about the lack of information on drill muds, cuttings and formation water and appreciate such candid statements.

The DEIS claims that drilling discharges have little or no biological oxygen demand (BOD) and cites the 1983 NRC study (p. IV.D-32). This directly contradicts a more recent EPA study that found drilling muds and cuttings to have 6 times the BOD and 30 times the COD of ocean dumped sludge (Assessment of Environmental Fate and Effects of Discharges from Oil and Gas Operations, EPA, 1985). This discrepancy should be explained.

North Carolina is especially concerned about fisheries impacts. The Division of Marine Fisheries' comments are attached and additional comments are provided here. Section IV should include effects on recreational fishing as a result of fisheries displacement. The discussion on fisheries and impacts from an oil spill (p. IV.A-46) should also include an analysis of possible economic impacts. Under the "high case" scenario (p. IV.D-431), impacts to fisheries are "not expected to produce measurable economic losses lasting more than one to two seasons." A loss of even one season could be financially disastrous to many commercial fishermen and operators of recreational charter boats. The DEIS also states that "sport fishermen fish in nearshore waters," and that most major fisheries in the Mid Atlantic occur in nearshore waters (IV.D-261). Many sport fishermen also fish in the Gulf Stream offshore North Carolina in the vicinity of active and proposed lease blocks. The "Point," which is approximately 30-35 miles offshore, is one of the most heavily fished sites along the East Coast. The base case mentions possible conflicts between petroleum industry use of the Morehead City Port and recreational fishing interests (p. IV.D-421). Given that the high case projects greater activity, these possible conflicts should be discussed here.

Healthy estuaries are essential to North Carolina's commercial and recreational fishing industry. North Carolina and south Florida estuaries are more susceptible to water pollution than other estuaries along the Atlantic coast (p. III-171). Thus, effects from pipelaying and spills would be more significant; however, this analysis was overlooked in Section IV. The analysis should also include the possible effects of pipeline emplacement on beaches, nesting sea turtles and migrating shorebirds (p. IV.A-13/14).

The discussion of oil spill impacts in the benthic community (p. IV.D-217) should include a section on the effects and expected recovery of SAV areas and associated fauna. This should also be included in all subsequent scenarios.

In the program document, MMS says that domestic OCS development will reduce tankers and, therefore, the risk of oil spills, while the DEIS (p. IV.D-30 and 338) acknowledges that any OCS oil produced in the Atlantic will be transported by tanker. Tankering of OCS oil in the Atlantic should be considered part of OCS

production activities and factored into the environmental cost assessment.

There is a continuing problem of MMS assuming that cumulative effects must be induced by simultaneous actions (p. IV.D-303). This approach has been repeatedly criticized and should be corrected. "Cumulative" means "increasing or enlarging by successive additions," **not** simultaneous actions alone.

The discussion on air quality and gas processing plants is confusing (p. IV.D-311). How can three new gas plants be considered existing facilities and therefore have no impacts on air quality? There is also a statement about existing gas processing plants. Where are they located? There are no oil refineries mentioned in the base case scenario, but this section mentions an increase from three to four. In addition, the base case also fails to discuss impacts to water (or air) quality from refineries. In the discussion of activities that could impact air quality (p. IV.D-36), emissions from consumptive use of OCS oil and gas are not listed as an impact. This is an example of a cost that is not factored into the true cost of energy alternatives.

Miscellaneous Comments. (1) We are still confused by the different resource estimates used --conditional, risked, unleased undiscovered, etc. Table IV.D.1.a.1. gives a figure of 2.24 tcf of natural gas as the conditional resource estimate for the Mid and South Atlantic. The base case conditional estimate for natural gas in the proposed program document is 4.63 tcf. Both are conditional estimates, which means hydrocarbons are assumed to be present. Which is accurate?

(2) The discussion of the well blowout (p. IV.H-40) should address health and human safety issues of both the rig personnel and passengers and crew on nearby vessels.

(3) Reinjection is not always technically feasible (p. IV.A-24), but the EPA believes it is generally feasible in almost all offshore areas (58 Fed. Reg. 10688).

(4) The 1988 citations on the affected environment (p. III-175) omit several recent and severe hurricanes such as Hugo and Bob.

Appendix C. The tone of this appendix clearly implies that the authors do not consider alternatives to OCS oil and gas to be viable or desirable. The environmental effects of some of these strategies seem quite similar to effects from oil and gas drilling, yet are characterized as representing a far greater risk to the environment. One analysis goes so far as to mention that the steel needed for windmills would create environmental problems associated with coal and iron industries. What materials are used to build tankers, drillships, platforms, pipelines, etc.? In a further comparison, there is no consideration of wildlife and vegetation or erosion impacts from OCS activities or effects of radioactive drilling wastes. This appendix is very biased and needs to be rewritten. Before it is rewritten, the authors should read a special **Scientific American** issue on " Energy for Planet Earth" (September 1990, vol. 263, no. 3).

Appendix D is generally well done and informative. There is good coverage on the technical limitations of mechanical recovery.

Appendix E and Needed Lease Stipulations. Several references are made to lease stipulations that are assumed to be part of the proposal or to conditions that seem to warrant lease stipulations. Yet, Appendix E discusses minimal lease stipulations. Several examples are mentioned below.

Recent evidence of mass movement has been observed on the slope, particularly between 31 and 35 N. latitude (III.-162). There is no mention in App. E of a lease stipulation to address this concern. North Carolina would support such a stipulation.

In discussing endangered species, MMS says that, "Lease stipulations assumed to be part of the proposal provide special protection to safeguard endangered manatees from adverse impacts associated with the proposed action" (p. IV.D-102). North Carolina supports this stipulation. However, there is no indication in App. E of this type of stipulation and, to our knowledge, there have been none in previous lease sales.

In the section on seabirds, MMS states that "Lease stipulations assumed to be part of the proposal provide safeguards for non-endangered and non-threatened bird species and their habitats" (p. IV.D-146). North Carolina supports this type of stipulation. However, there is no indication in App. E of this stipulation and, to our knowledge, there have been none like this in previous lease sales.

MMS says that, "It is assumed that stipulations adopted for previous lease sales in the Atlantic Region are not of the proposal" (p. IV.D-170). That DEIS statement directly contradicts p. IV.D-214, which states that, "It is assumed that a lease stipulation adopted for previous Atlantic sales to protect special biological resources will be adopted for the proposal." North Carolina supports all prior lease stipulations as the minimum required for future lease sales, with additional ones added for specific purposes.

Regarding benthic communities, MMS says that, "Protections to biological resources through lease stipulations would reduce or eliminate physical impacts on localized benthic communities associated with the placement of drilling rigs and other bottom-founded structures" (p. IV.D-214). North Carolina

supports this type of stipulation, and would like to see it more fully described in App. E.

In discussing impacts on fish resources, MMS promises that drilling fluids and cuttings "would be shunted to avoid sensitive areas or transported by barge to disposal areas, if necessary" (p. IV.D-170). North Carolina supports this important stipulation. However, there is no indication in App. E of this type of stipulation and, to our knowledge, there have been none in previous lease sales.

An important lease stipulation is missing from App. E that North Carolina urges MMS to include. A stipulation should specify that the studies recommended by the N.C. ESRP be conducted and completed prior to the relevant phase of OCS activity. Such a stipulation would provide notice to future lease purchasers that certain information may have to be in hand before drilling, development or production can occur.

Editorial. Numerous citations throughout the document are not found in the bibliography, making a comprehensive review impossible.

Is the figure for Virginia on weight for finfish correct in Table III.D.3-1? If so, there should be a qualifier that this figure is partly attributable to catches offshore North Carolina.

The Atlantic OCS Region Surface Circulation Figure is misleading (p. III-164). The Gulf Stream is depicted too far south and east of Cape Hatteras. The statement that "the shelf-slope front may act as a barrier to shelf-slope transfer of water mass and momentum" (p. III-165) is an important concept but has no citation to the source. The paragraph on Gulf Stream current speeds (p. III-166) needs to give the recorded speed off Cape Hatteras (i.e., in excess of 5 knots at the Mobil drill site).

Table III.D.1-4 has misspelled Swanquarter Wilderness.

The paragraph on the CZMA and consistency seems out of place in a discussion on land use (p. III-204). OCS activities must be consistent with a state's entire CZM program of which land use is just one part.

Section IV on generic impacts contains many statements of fact but virtually no citations to sources.

The third paragraph, last sentence on page IV.A-18 is missing some words so it is difficult to understand.

In several places in the DEIS, different time periods are given for the activities under the proposed plan. They range from 13 to 17 to 34 to 49 years. For example, at IV.D-147, 27 years of drilling activity are mentioned; while IV.D-171 mentions the drilling between 1995 and 2011, a period of 16 years. This needs to be clarified.

The second sentence of the first paragraph on page IV.D-172 needs to be properly qualified such as in the following manner: "While no data from the Atlantic is available, platforms may act as artificial reefs that could ...."

Some of the blocks under leasing consideration off Cape Hatteras appear to be closer than 50 miles, contrary to paragraph 5 (p. IV.D-181).

An erroneous assumption is made (p. IV.D-259) that the Morehead City Port facility has facilities to handle petroleum industry support needs. This is true for exploration but not for development and production.

Attachment 3

State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor
William W. Cobey, Jr., Secretary

Douglas G. Lewis
Director
Planning and Assessment

MEMORANDUM

TO: Donna Moffitt

FROM: Melba McGee
Project Review Coordinator

RE: Draft EIS for Outer Continental Shelf Natural Gas and Oil Resource Management

DATE: October 18, 1991

The Department of Environment, Health, and Natural Resources has reviewed the Department of Interior's Proposed Five-Year Program and Draft Environmental Impact Statement for OCS Natural Gas and Oil Resources Management. The consensus is that the information that was circulated for review was not sufficient in identifying the potential effects of this project. Our divisions have provided substantial comments that accurately reflect their concerns and identifies the weaknesses and information voids that need additional attention.

Thank you for the opportunity to respond. Comments have been attached for your consideration.

MM:bb
attachment

P.O. Box 27687, Raleigh, North Carolina 27611-7687 Telephone 919-733-6376

Attachment 3

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OCT 21 1991
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State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor
William W. Cobey, Jr., Secretary

Douglas G. Lewis
Director
Planning and Assessment

October 18, 1991

MEMORANDUM

TO: Donna Moffitt

FROM: Doug Lewis Doug Lewis

SUBJECT: Draft EIS: OCS Comprehensive Program 1992-97

The scale of analysis is so immense that issues/impacts important to a state are dwarfed by national priorities and scope. The impacts do not get addressed, yet the cumulative impact may be significant enough to warrant analysis at a lessor scale than presented in the DEIS.

The Environmental Review Science Panel has concluded that inadequate information exists to evaluate drilling impacts off North Carolina. I believe the same circumstance exists relative to leasing. Impacts cannot be evaluated because information is lacking. We ought to be afforded the same moratorium protection as selected other coastal states have.

The data on tourism (III-218) is dated and conservative in nature. Dare County alone has tourism revenue in excess of $500 million. Recreational fishing (III-212) has no estimate of value attached to it. Little information is presented to describe employment, income, or taxation relevant to the specific activities mentioned in the socioeconomic environment beginning on page III-200.

State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor
William W. Cobey, Jr., Secretary

Douglas G. Lewis
Director
Planning and Assessment

October 17, 1991

MEMORANDUM

TO: Donna Moffitt

FROM: Bill Flournoy BF

SUBJECT: Draft EIS: OCS Comprehensive Program 1992-97

The following comments address significant weaknesses in the approach taken and information provided within the discussion of the Affected Environment.

In the discussion of the Affected Environment, the Physical Environment includes no information on air quality. Thus, there is no foundation for later discussion of Environmental Consequences for air quality. At a minimum, Class I air quality areas and Non Attainment Areas should be identified along the coast.

III-171

III. Affected Environment, D. Atlantic Region, 1. Physical Environment, c. Water Quality, (2) Estuarine

This section only presents water quality problems. Of equal or greater importance are areas of high water quality which deserve protection from degradation. Areas of Outstanding Resource Waters and High Quality Waters should be included in this presentation of the Affected Environment.

III-199

III. Affected Environment, D. Atlantic Region, 2. Biological Environment, g. Areas of Special Concern

This section only discusses nationally designated areas. There is no environmental justification for not including comparable areas designated by states, local governments or private non-profit organizations (State Estuarine Reserves, Nature Conservancy and Audubon Society Sanctuaries, State Parks, and State-owned Gamelands), since such areas perform the same functions. Excluded from Table III. D. 2-6 which lists National Parks was the Wright Brothers National Monument. Excluded from Table III. D. 2-7 which lists National Wildlife Refuges was the Roanoke River. National Natural Landmarks were not included in any listing, nor were Congressionally designated Wilderness areas, or U.N. Biosphere Reserves.

Attachment 3

State of North Carolina
Department of Environment, Health, and Natural Resources
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P.O. Box 769 • Morehead City, North Carolina 28557-0769

James G. Martin, Governor
William W. Cobey, Jr., Secretary

William T. Hogarth, Director
(919) 726-7021

MEMORANDUM

TO: MELBA McCEE

FROM: WILLIAM T. HOCARTH

DATE: OCTOBER 4, 1991

SUBJECT: OCS NATURAL CAS AND OIL RESOURCE MANACEMENT PROGRAM

The Division of Marine Fisheries has reviewed the fisheries portions of the Department of Interior's Proposed Five-Year Program and Draft Environmental Impact Statement for OCS Natural Cas and Oil Resource Management. The Five Year Comprehensive Program report acknowledges that site specific information is lacking on the effects of hydrocarbons and trace elements relevant to possible OCS operations and long term impacts of habitat alterations on fish populations. We do not feel that the statement that "the distribution, abundance, and life history of most species is reasonably well known" applies to marine species found off the coast of North Carolina. We feel that additional information is needed concerning spawning areas and seasons and early life history stages of the species that utilize the waters of the mid-Atlantic and South Atlantic region. Contrary to the recommendation on p. 157 of the proposal, we recommend that studies should be concentrated on species which utilize offshore waters, rather than shallow estuarine and coastal habitats, for spawning and nursery grounds.

Marine Fisheries concerns regarding natural gas or oil exploration of additional areas of the North Carolina coast between 1992 and 1997 are the same as those that have been expressed for the Manteo Exploration Unit. That is, the waters off the coast of North Carolina contain an abundant and diverse marine fauna primarily as a result of our geographic proximity to the warm waters of the Culf Stream and the cold southerly flowing Labrador current. The Cape Hatteras area is a transition zone for fishes of different zoogeographic affinities and is characterized by large seasonal shifts in fish populations. This instability and lack of permanence has great implications for both natural and man-made effects on the fauna. South of Cape Hatteras,

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numerous areas of "live-bottom" are found scattered across the continental shelf; these areas serve as habitat for many species of snappers, groupers, and other reef fish. As is pointed out in the EIS, many of these resources are already fully exploited and several are overexploited. The Division of Marine Fisheries does not believe the additional stress on these populations as a result of offshore exploration or production is an acceptable risk or that a 2 to 12 year recovery period of fisheries resources with its associated economic loss is acceptable.

Information presented in the EIS on fisheries resources, commercial and recreational fishing, and socioeconomic information regarding fisheries is insufficient to evaluate impacts of offshore oil development along the North Carolina coast. The Division has identified serious deficiencies in the resource data for the Manteo drilling site and has recommended fisheries studies viewed as essential in order to address informational concerns related to potential drilling impacts on fisheries resources. Marine Fisheries has similar concerns about offshore spawning and nursery areas, Sargassum beds, and fishing catch and effort for other areas of the coast, as well.

In summary, a thorough assessment of both available and necessary information should be made prior to the sale of additional leases near the North Carolina coast. Until such information becomes available, the Division of Marine Fisheries recommends that no areas be leased for natural gas or oil exploration or production inshore of the eastern wall of the Gulf Stream off the coast of North Carolina.

WTH:FHM/LPM:jtg

CC: Munden
Mercer
Street

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James G. Martin, Governor
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George T. Everett, Ph.D.
Director

October 3, 1991

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MEMORANDUM

TO: Melba McGee, Division of Planning and Assessment

FROM: Alan Clark AC, Planning Branch

SUBJECT: Project No. 92-0422; US DOI Proposed 5-year Program and Draft EIS for Outer Continental Shelf Natural Gas and Oil Resource Management

The time frame allotted for review of the subject DEIS and 5-year program was insufficient in light of the bulk of material that needed to be reviewed. The attached memoranda from the Division of Environmental Management's Air and Water Quality Sections represent those DEM comments generated within the limited review period. The comments were requested by Stephanie Spence Briggs prior to her departure from DEM. Based on these memoranda, the following recommendations are made:

1. The factors used in ranking "Relative Marine Productivity" and "Relative Environmental Sensitivity" appear to be too general and not representative of the far ranging conditions within the project area. These factors need to be reexamined. (Ausley memo)

2. More information needs to be provided to justify the conclusion in the DEIS (Vol. I, Pg. IV.A-26) that radionuclide formation will cause no apparent human health or environmental contamination problems. (Ausley memo)

3. The statement in the DEIS (Vol. I, Pg. IV.A-26) that the effluent must have a minimum chloride residual of 1.0 PPM should be changed to read chlorine residual. (Ausley memo)

4. A more comprehensive air quality assessment, including modeling of potential air quality impacts of the immediate vicinity of the drill sites should be required to determine the impact on commercial or sport fishing, as well as others using the waters within the proposed drill sites. (Amerson memo)

Please advise if you need any additional information.

cc: Larry Ausley
Sammy Amerson

P.O. Box 29535, Raleigh, North Carolina 27626-0535 Telephone 919-733-7015 / Pollution Prevention Pays

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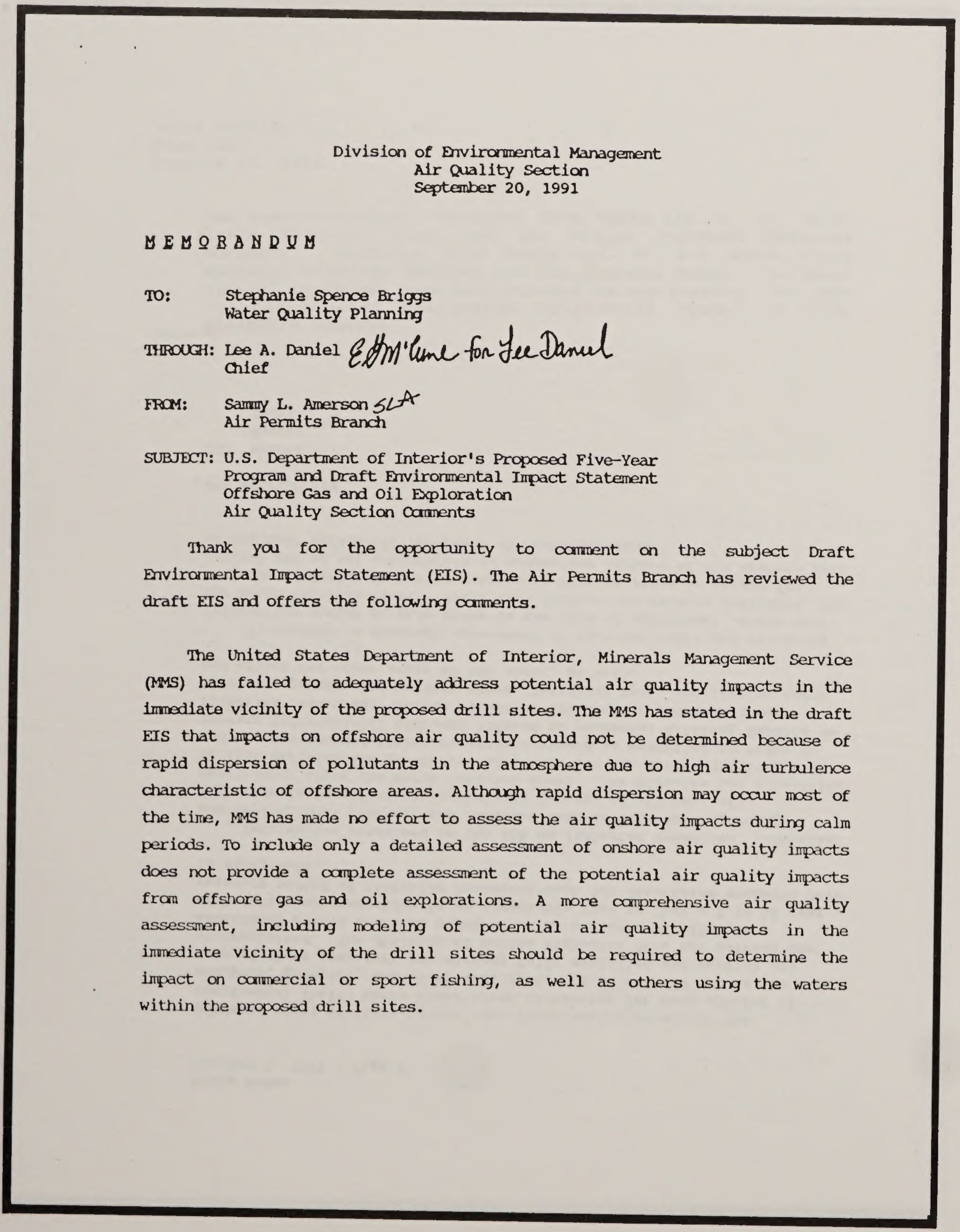


Division of Environmental Management
Air Quality Section
September 20, 1991

MEMORANDUM

TO: Stephanie Spence Briggs
Water Quality Planning

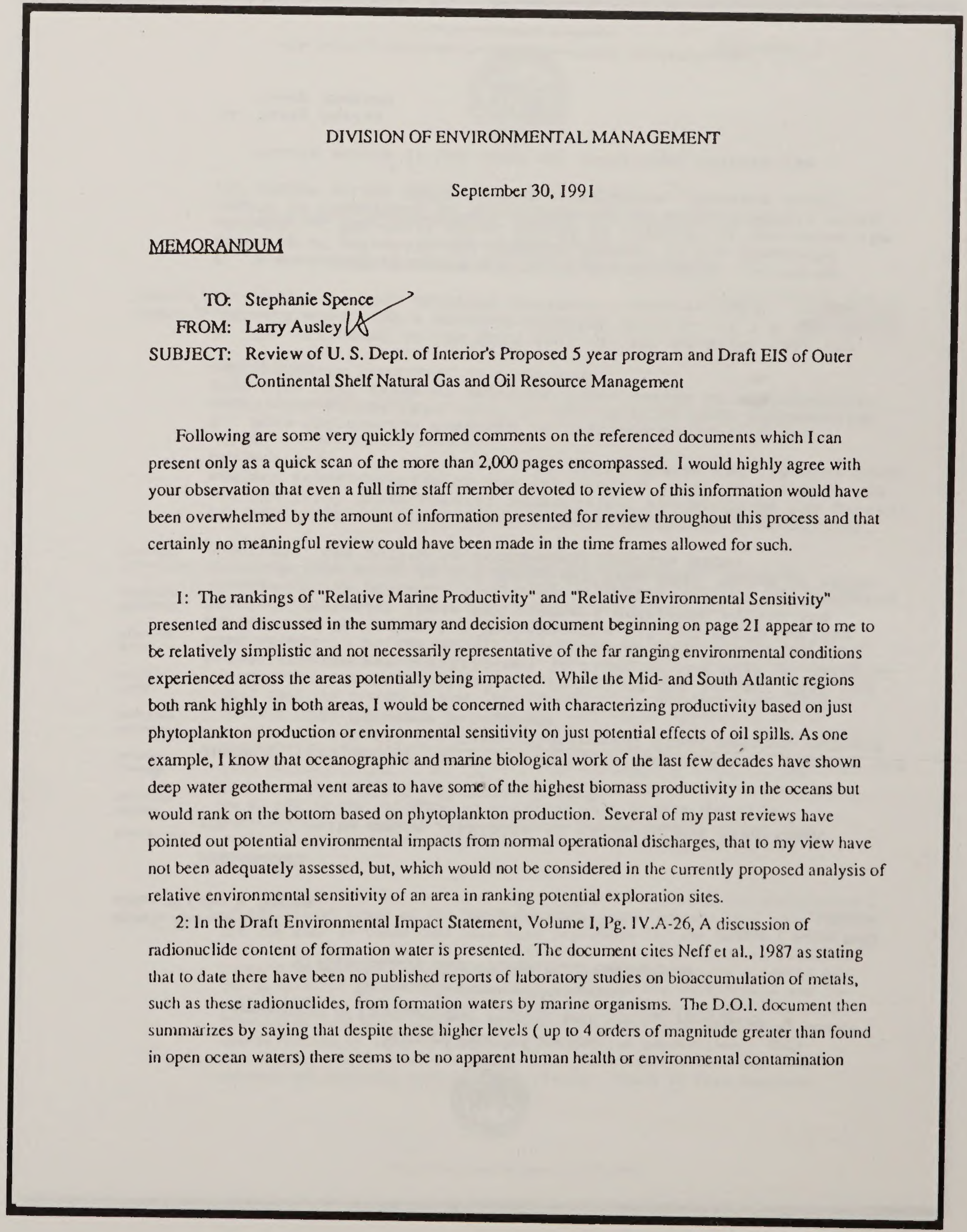
THROUGH: Lee A. Daniel for Lee Daniel
Chief

FROM: Sammy L. Amerson SLA
Air Permits Branch

SUBJECT: U.S. Department of Interior's Proposed Five-Year
Program and Draft Environmental Impact Statement
Offshore Gas and Oil Exploration
Air Quality Section Comments

Thank you for the opportunity to comment on the subject Draft Environmental Impact Statement (EIS). The Air Permits Branch has reviewed the draft EIS and offers the following comments.

The United States Department of Interior, Minerals Management Service (MMS) has failed to adequately address potential air quality impacts in the immediate vicinity of the proposed drill sites. The MMS has stated in the draft EIS that impacts on offshore air quality could not be determined because of rapid dispersion of pollutants in the atmosphere due to high air turbulence characteristic of offshore areas. Although rapid dispersion may occur most of the time, MMS has made no effort to assess the air quality impacts during calm periods. To include only a detailed assessment of onshore air quality impacts does not provide a complete assessment of the potential air quality impacts from offshore gas and oil explorations. A more comprehensive air quality assessment, including modeling of potential air quality impacts in the immediate vicinity of the drill sites should be required to determine the impact on commercial or sport fishing, as well as others using the waters within the proposed drill sites.



DIVISION OF ENVIRONMENTAL MANAGEMENT

September 30, 1991

MEMORANDUM

TO: Stephanie Spence
FROM: Larry Ausley LA
SUBJECT: Review of U. S. Dept. of Interior's Proposed 5 year program and Draft EIS of Outer Continental Shelf Natural Gas and Oil Resource Management

Following are some very quickly formed comments on the referenced documents which I can present only as a quick scan of the more than 2,000 pages encompassed. I would highly agree with your observation that even a full time staff member devoted to review of this information would have been overwhelmed by the amount of information presented for review throughout this process and that certainly no meaningful review could have been made in the time frames allowed for such.

1: The rankings of "Relative Marine Productivity" and "Relative Environmental Sensitivity" presented and discussed in the summary and decision document beginning on page 21 appear to me to be relatively simplistic and not necessarily representative of the far ranging environmental conditions experienced across the areas potentially being impacted. While the Mid- and South Atlantic regions both rank highly in both areas, I would be concerned with characterizing productivity based on just phytoplankton production or environmental sensitivity on just potential effects of oil spills. As one example, I know that oceanographic and marine biological work of the last few decades have shown deep water geothermal vent areas to have some of the highest biomass productivity in the oceans but would rank on the bottom based on phytoplankton production. Several of my past reviews have pointed out potential environmental impacts from normal operational discharges, that to my view have not been adequately assessed, but, which would not be considered in the currently proposed analysis of relative environmental sensitivity of an area in ranking potential exploration sites.

2: In the Draft Environmental Impact Statement, Volume I, Pg. IV.A-26, A discussion of radionuclide content of formation water is presented. The document cites Neff et al., 1987 as stating that to date there have been no published reports of laboratory studies on bioaccumulation of metals, such as these radionuclides, from formation waters by marine organisms. The D.O.I. document then summarizes by saying that despite these higher levels (up to 4 orders of magnitude greater than found in open ocean waters) there seems to be no apparent human health or environmental contamination problem because of rapid dilution of these waters formed offshore. I cannot see how this assumption is being justified with the stated lack of information that the authors cited above.

3: In the Draft Environmental Impact Statement, Volume I, Pg. IV.A-26, A discussion of the effects of sanitary discharges is made. The document states that the effluent must have a minimum chloride residual of 1.0 PPM. This should read chlorine residual. This difference represents about a five order of magnitude difference in the allowable toxicity of the two chemical species of chlorine and is a mistake that should be closely followed into permit requirements.

Thank you for the opportunity to comment on this document and the hard work that you have done in the past compiling comments. if I can provide further information, please advise.

OCS OFFICE
OCT 08 1991
RECEIVED

State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor
William W. Cobey, Jr., Secretary

Douglas G. Lewis
Director
Planning and Assessment

October 7, 1991

MEMORANDUM

TO: Donna Moffitt, Director
Outer Continental Shelf Office, DOA

THROUGH: Doug Lewis Doug Lewis

FROM: Greg Pittman Gregory B. Pittman

SUBJECT: Review of the Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program 1992-1997 Proposal dated July 1991

Upon completion of my review of the above referenced document, several serious concerns became evident with the Decision Document as proposed by the United States Minerals Management Service. There two types of concerns, those of a general nature and those of a more specific nature. These concerns will now be discussed.

General Concerns

1. North Carolina should be afforded the opportunity to study and obtain necessary information until the year 2000 as most of the other coastal states are being afforded. The current proposal is very inequitable in this regard.

2. There is a general lack of information in most environmental areas. More environmental studies are required to accurately understand the potential impact to the environment in North Carolina.

3. Throughout the document, there is one underlying theme. It is evident that no concern is given to the cost(s)/benefit(s) to any locality, local governmental body, and any state(s). Benefits accrued to planning regions, the federal government, and to industry are given. By aggregating all costs and benefits in this manner, the potential impact on those truly impacted by

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costs and benefits are hidden, and other important questions are avoided.

Specific Concerns

4. The purposes of the OCS Lands Act (43USC 1802) states the following:

> "(B) to balance orderly energy resource development with protection of the human, marine, and coastal environments,
> (C) to insure the public a fair and equitable return on the resources of the Outer Continental Shelf,
> (D) to preserve and maintain free enterprise competition,
> (E) the equitable sharing of developmental benefits and environmental risks, discussed above."

As stated in items 1 and 2 above, there is a general lack of environmental and marine information regarding the North Carolina coastal environment, and of the potential impact that this proposal could have on the coastal counties of North Carolina. In turn, how can it balance orderly energy resource development? In North Carolina, the coastal fishing industry adds over one billion dollars to the state's economy annually. This category alone does not begin to adequately value North Carolina's marine and coastal importance to the state and the nation. The scales must be properly adjusted to take this type of information into account, when these resources are truly balanced.

Is it more important to insure the public a fair and equitable return on the oil and gas resources of the Outer Continental Shelf, than the total resources of the Outer Continental Shelf and coastal areas in total? It is very important that this issue is carefully addressed, and adequately studied, so all relevant factors can be considered. If additional information is required, then it should be obtained to afford good decisions concerning our total natural resources, and not just a select few.

Is it more important to preserve and maintain free enterprise competition of selected industries and not those of our coastal fishing industry, our travel and tourism industry, and our real estate industry. These are but three of many industries that could be negatively impacted due to an oil spill. These three industries add billions of dollars annually to the economy of North Carolina and the nation. Is it not important to preserve them, especially when they provide a greater positive impact on the economy in most coastal states than does oil and natural gas?

Currently, the developmental benefits and environmental risks are not shared equitably. Until all real components of the coastal environment and the coastal economy are broken into their respective state boundaries, the developmental benefits and environmental risks can not be shared equitable, first because no one knows what they truly are, and second, the resources and the economies of every coastal state is different. Some have more to risk than others. What happens to the local economy and tax base when an oil spill takes place, property values decline, sales tax collections decline? What body will reimburse the local area and the state that has been negatively impacted? How is this to be shared?

5. In Table 7-IV.3, the risked net economic value estimates on page 7-45, how was the marginal probability that economically recoverable resources occur in the areas being analyzed developed? With a benefit of $18.00, and a cost of $16.50, the benefit to cost is only 1.09 to 1.00. For the Mid and South Atlantic region, there is a 63 percent probability of economically recoverable resources will occur. This is a low benefit to cost, especially for a 63 percent probability of economically recoverable resources exist.

6. In Appendix 8, economic analysis of environmental costs, it states on pages 8-1 and 8-2 that "the estimates for value of lost oil, which is the expected market value of spilled oil, represents most, if not all of the value for environmental costs. For other potential environmental costs, the assessment is difficult and many aspects of the value of the resource group are omitted. For example, the estimated values of marine mammals potentially killed by oil spills is not a market prices because of the special status of marine animals under the law precludes them having a market value." In North Carolina alone, the coastal fishing industry adds over one billion dollars to the state and national economy annually. It is difficult to see how this information can be omitted from a decision making process.

7. On page 8-37, "Lost visits are the total net lost visits to all equivalent sites, since visitors merely shifting their visits to another similarly-valued site would not represent a reduction in net national benefit." Even if statement were true, a locality and a state(s) would lose visits, which in turn is revenue and economic viability. The travel and tourism, real estate, fishing industry, together add several billion dollars to the North Carolina economy and the national economy. If an oil spill actually occurred, the locality and the state(s) would be negatively impacted. While it might be true that the national net benefit may not be impacted, the area in question would certainly pay a heavy price for the accident. The reality of the matter can not and should not be lost in the national aggregate picture, as it currently is.

8. On page 8-49, Table 8-III.3, Oil spill impacts on property values, one finds the value of land given to the Mid and South Atlantic to be very low. North Carolina has approximately 320 miles of ocean front property. Currently 100 foot ocean front lots sell for $110,000 and up, excluding structures. The $112,573 value assigned per mile of shore is not realistic.

To conclude, it is important that these concerns be addressed for the benefit of the environment and the residents of North Carolina.

State of South Carolina
Office of the Governor

CARROLL A. CAMPBELL, JR.
GOVERNOR

OFFICE OF EXECUTIVE
POLICY AND PROGRAMS

December 20, 1991

Debra Purvis
Environmental Projects Coordination Branch
Minerals Management Service
381 Elden Street
Herndon, VA 22070

Dear Ms. Purvis:

Enclosed on behalf of the State of South Carolina are comments on the OCS Comprehensive Program Draft Environmental Impact Statement for 1992-1997. I am forwarding for your consideration two sets of comments, from Victor G. Burrell, Jr., Ph.D. and Jane D. Settle, both of the South Carolina Wildlife and Marine Resources Department.

I enjoyed speaking with you on the telephone today. Thank you for your consideration of these comments.

Sincerely,

Carlisle Roberts, Jr.

Carlisle Roberts, Jr.
Director of Energy, Agriculture
and Natural Resources

CRjr/tad

S.C. WILDLIFE AND MARINE RESOURCES DEPT.
EQUAL OPPORTUNITY AGENCY

South Carolina
Wildlife & Marine
Resources Department

James A. Timmerman, Jr., Ph.D.
Executive Director
Paul A. Sandifer, Ph.D.
Director of
Marine Resources Division

August 29, 1991

Mr. Carlisle Roberts, Jr.
Director
Division of Energy, Agriculture, Natural Resources
1205 Pendleton Street, Suite 333
Columbia, SC 29201

Dear Carl:

I have finished the review of the Draft Impact Statement for the MMS Comprehensive Program 1992-1997. My chief emphasis was with the sections on the South Atlantic. It appears to me to be well done with few needed corrections.

The executive summary outlines the proposal with five options. By and large the options call for less aggressive development of the offshore resources. Any of these would reduce impact on natural resources of the immediate areas of prospecting and production, but would increase environmental problems associated with larger impacts on development of alternate energy sources.

The proposal calls for two sales (1994-1997) in the Atlantic. The tentative blocks to be offered off S.C. are approximately 115-140 miles offshore. If commercially viable finds are made oil will be brought ashore in tankers and gas will be piped ashore. Experts predict it will most likely be gas. Pipelines could come ashore conceivably in the Savannah, Charleston, or Wilmington area or anywhere in between. My feeling is, that it will have to be a large find to warrant such an effort. Estimated undiscovered resources for the mid and south Atlantic are 0.08 billion barrels of oil and 2.24 trillion cubic feet of gas with a probability of .63 that commercial quantities occur (IV.D-2). Six wells have been drilled in the south Atlantic, all in the southeast Georgia embayment and all were dry. Other areas in the south Atlantic have higher hydrocarbon potential. They are the Carolina Trough and the Blake Plateau Basin (III-161-162).

I feel we should be concerned that information is lacking for us to assess the risks of an oil spill entrained in the Gulf stream coming ashore via eddies in South Carolina or harming prime recruitment areas for some of our important commercial or recreational marine species. We do not know the areal extent, location or the ~~presence~~ persistence of live bottoms well enough to predict the impacts of drilling or pipeline activities off our own coast. You might wish to suggest these as information groups that should be addressed.

P. O. Box 12559 ☐ Charleston, South Carolina 29422-2559 ☐ Telephone: 803 – 795-6350

The individual comments on the enclosed sheet are things that were not addressed or should be corrected in the draft EIS. All comments are referenced to section in the EIS.

I hope this is of help. Give me a call if you need any further work on it.

Sincerely,

Vic

Victor G. Burrell, Jr., Ph.D.
Director
MARINE RESOURCES RESEARCH INSTITUTE

VGBjr/msl

The ~~minerals~~ numerals in the left-hand column refer to sections and page number in the EIS.

III-163	Sand and gravel deposits off the South Carolina coast are being sought for beach renourishment purposes.
III-167	Timing, persistence, and magnitude of Gulf Stream meanders are not defined for South Carolina coastal waters. They have been implicated in red tide events impacting S.C. nearshore and estuarine environments.
III-191	Paragraph 3. Silver Perch *Bairdiella chrysura* is not fished commercially or recreationally in the South Atlantic.
III-191	A fishery for wreckfish *Polyprion americanus* is being pursued in depths of 450-600 m on the Blake Plateau. Sedberry et al. 1990. The fishery for Wreckfish (*Polyprion americanus*) in the Southeastern United States. Proc. Gulf Carrib. Fish. Inst. 43. ~~Am.~~ ANNU. Sess. Miami Fl. Nov. 1990 (In Press). This should be a habitat in the South Atlantic area.
III-191	Paragraph 5. Live bottom area extent, location, and population structure is poorly known so impacts are difficult to predict.
III-218	Paragraph 4. South Carolina has 24 artificial fishing reefs, seven of which are within state waters. (Mel Bell, personal communication).
IV-A-13(e).	Turtles are also impacted by dredging activities such as pipeline placement.
IV-A-43.	Paragraph 7. Topography and high tidal range such as in South Carolina, can dramatically increase the area impacted by spilled oil. (Burrell, V.G. 1989. South Carolina's concerns. Proc. Third Atlantic Outer Continental Shelf Region Info. Trans. Mtg. (ITM) OCS Study MMS 89-0099. pp 96-97.

The Shortnosed sturgeon, *Ascipenser brevriostrum*, an endangered species is andromous and occurs in South Carolina waters and should be mentioned in the report.

South Carolina
Wildlife & Marine
Resources Department

EQUAL OPPORTUNITY AGENCY

James A. Timmerman, Jr., Ph.D.
Executive Director
Paul A. Sandifer, Ph.D.
Director of
Marine Resources Division

December 5, 1991

RECEIVED
DEC 0 6 1991
DIVISION OF ENERGY
AGRICULTURE & NATURAL RES.

Mr. Carl Roberts
State of South Carolina
Office of the Governor
Division of Energy, Agriculture, and
Natural Resources
Edgar A. Brown Building, Suite 333
1205 Pendleton Street
Columbia, S.C. 29201

Dear Carl:

Thanks for the information you faxed to me regarding the OCS Comprehensive Program Draft Environmental Impact Statement (DEIS) for 1992-1997. Based on this, the limited review which I have done on the documents, the input which I have received from other Marine Resources Division biologists, and some additional information submitted previously from other states, I would offer the following comments to be incorporated into South Carolina's letter to the Minerals Management Service (MMS).

First, I'll address a few specifics. Dr. Burrell's letter has some very applicable points:

1) the lack of information in the DEIS to specifically evaluate the potential for harm to important commercial and/or recreational species,
2) the need for better assessment of live bottom habitat in areas targeted for exploration and/or production activities,
3) the fact that no information on the shortnose sturgeon (Acipenser brevirostris) was included in the DEIS,
4) the need for better assessment of risks for oil spill entrainment in the Gulf Stream and potential onshore movement via eddies, and
5) specific items listed in his letter.

Additionally, I am aware of several other pieces of information which are not included or which warrant modification. While I am sure that this list is not all-inclusive, these are:

1) the omission of information on several species of cetaceans [III.D.2.a.(1.) & (2.)], such as a humpback whale stranding on Hilton Head in winter (page III-175), the presence of a

right whale cow and calf off Myrtle Beach during October-December (page III-179), and the fact that both pigmy sperm and dwarf sperm whales are not even mentioned in the DEIS and they both strand frequently in South Carolina,

2) additional information from a new report by Marsh and Wilkinson on coastal shorebirds (III.D.2.b.(2), page III-184) should be included or at least referenced,

3) there are numerous properties along South Carolina's coast under both State and Federal management which need to be better identified and potential environmental impacts from OCS activities addressed (Yawkey Preserve, Belle Baruch Laboratory and Center, Santee Coastal Reserve, Capers Island),

4) the fact that all of the areas identified in #3 are part of a UNESCO Man and the Biosphere Programme (MAB) Reserve and the implications of this designation should be identified,

5) quite a bit of information regarding fish resources (III.D.2.c.) needs modification (Blake's Plateau should be added to the listing of five types of habitat identified by Struhsaker for the South Atlantic continental shelf with wreckfish added as the primary important dependent upon this area species); both spot and menhaden must be added to the list of species for the coastal due to their abundance and importance; porgies (Sparidae) need to be added to the warm water snapper-grouper assemblage of fishes for live-bottom habitats; tilefish should be added to the species list for the continental slope habitat; the species of tunas and other scombrids which occur in the South Atlantic should identified for this region as they are for the north and mid-Atlantic (yellowfin tuna needs to be added to Table III.D.2-4); also the paragraph describing the pelagic species should be expanded to include billfish; the Sargassum community is important to pelagic stages of various reef fish, such as red porgy and wreckfish, as well as the epipelagic predators mentioned; also, mention should be made of the importance of the area known as the "Charleston Bump" as a spawning and nursery area for numerous species; and Amendments 1-5 of the South Atlantic Fishery Management Councils Snapper/Grouper Management Plan need to be included in the list of references at the end of the fisher resources section (page III-192).

The fact that this amount of information, and likely more, which is directly applicable to South Carolina was either inaccurate or missing from this DEIS clearly demonstrates the critical need for additional environmental impact assessment to be conducted prior to any lease sales off our coast. It is the

responsibility of the Minerals Management Service to provide this information to enable the most environmentally sensible decisions to be made in regards to oil and natural gas exploration and production in the OCS Region.

In general, there needs to better identification of onsite fish fauna for any location of a proposed lease sale, to include spawning and migrational routes, and paying particular attention to the critical life stages, such as eggs and larvae. Additional information on potential impacts of all aspects of exploratory and development activities on these resources and critical life stages should be provided. The potential impacts to the fisheries for these resources should be better identified, to include exclusions from fishing activities in areas of oil and gas activity and the many associated factors, gear damage, and numerous other impacts. Detailed oil spill contingency plans including specifics of waste disposal in the event a spill should occur should be required for specific locations of proposed lease sales.

A general comment which should definitely be made is in regards to the comprehensive nature of the DEIS. While it is beneficial, for some reasons, to have the ability to review potential OCS activities for the entire Atlantic coast, this method of DEIS preparation does present some problems for reviewers. For most categories of natural resources, it is nearly impossible to provide the amount of state-specific information in such a document to enable a thorough review of the potential impacts to those resources. The preparation of Regional EIS's allows this to be accomplished much more effectively. For this reason, quite a bit more information specifically applicable to individual states and their natural resources which could be potentially impacted needs to be provided by the MMS. Additionally, the MMS should make every effort to provide ample notification of the various proposed activities to the respective states as the time for their initiation approaches to allow for proper responses to be submitted.

Also, due to the responsibilities of your office, the S.C. Wildlife and Marine Resources Department, and the S.C. Department of Health and Environmental Control as Natural Resource Trustees for the State of South Carolina, we should strongly request the opportunity to review all information which is specifically related to any potential oil and gas activities to be undertaken off our coast. This includes specifics of proposed lease sales, environmental documents, information on shore-based support facilities, etc.

Well, this turned out to be more extensive than I had thought, due to some really good input from Marine Resources Division biologists, but there are still things that I am sure that we have missed. As I mentioned to you last week, I still intend to work on OCS stuff more intensively in January, 1992. At that time, I will spend some more time on this document and provide you with any additional comments that I think should be submitted. I feel that, as long as we maintain an avid interest in the process and provide input periodically, we will be in a better position to be kept abreast of things as they occur, as well as retaining our opportunity to request changes in the process if we feel that it is necessary.

I hope that this information is helpful and that it is not too late. Please give me a call (762-5068) if you have questions or would like to discuss this further.

Sincerely,

Jane D. Settle

Jane D. Settle
Environmental Evaluations

cc: Ed Duncan, SCWMRD
Charles Bearden, SCWMRD
David Cupka, SCWMRD
Ron Kinney, SCDHEC

CURTIS TUNNELL
EXECUTIVE DIRECTOR

TEXAS HISTORICAL COMMISSION
P.O. BOX 12276 AUSTIN, TEXAS 78711 (512)463-6100

September 6, 1991

Department of the Interior
Minerals Management Service
Attention: Branch of Environmental
Projects Coordination
381 Elden Street
Herndon, Virginia 22070-4817

Re: DEIS, Outer Continental Shelf Natural
Gas and Oil Resource Management
Comprehensive Program 1992-1997 (MMS, A4, A5)

Dear Sir:

Thank you for the opportunity to review the above referenced Draft Environmental Impact Statement (DEIS). Both our office and Mr. Barto Arnold, the Texas State Marine Archeologist at the Texas Antiquities Committee, concur with the cultural resources plan described in the DEIS. We have no recommendations for any changes in DEIS.

If we can be of further assistance, please advise.

Sincerely,

James E. Bruseth, Ph.D.
Deputy State Historic Preservation Officer

DP/JB/lft

The State Agency for Historic Preservation

COMMONWEALTH of VIRGINIA
Council on the Environment

KEITH J. BUTTLEMAN
ADMINISTRATOR

202 NORTH NINTH STREET
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October 29, 1991

S. Scott Sewell, Director, Director
Minerals Management Service
1849 C Street, NW.
Washington, D.C. 20240

Dear Mr. Sewell:

I am responding for the Commonwealth of Virginia to the following materials released on July 31st by the Minerals Management Service:

- the 1992-1997 Comprehensive Program for Outer Continental Shelf Natural Gas and Oil Resource Management,
- the associated Draft Environmental Impact Statement, and
- the response to Virginia's comments on the Draft Proposed Program document.

Our comments and recommendations are based on the review of those documents and information from other state agencies and institutions, coastal planning district commissions and their member agencies, other coastal states, MMS staff, and others. Written comments were received from the following (attached), and are to be considered a part of the Commonwealth's response.

- Dept. of Conservation and Recreation
- Dept. of Mines, Minerals, and Energy
- Marine Resources Commission
- State Water Control Board
- Virginia Institute of Marine Science
- Virginia Port Authority
- Hampton Roads Planning District Commission

Our comments are organized by key topics rather than by MMS documents so as to focus on our major concerns.

1. NEARSHORE BLOCKS

Governor Wilder and Secretary Haskell were gratified to see that the Minerals Management Service has eliminated from consideration for lease sale those blocks near Virginia's Eastern Shore and the mouth of the Chesapeake Bay. The Commonwealth, the coastal planning district commissions and their local governments, and other interested parties saw those blocks as a serious threat to the environment, living resources, and associated economic activities. We are all relieved to see that threat removed.

2. SUBMARINE CANYONS

The same MMS decision also resulted in the elimination of a number of blocks in and around the Washington Canyon as we had requested, and we are pleased by that action as well. While some of those blocks we identified remain as possibilities for lease sale we are reasonably satisfied at this point that the Washington Canyon now has appropriate protection. Since the remaining blocks would be subject to close examination if actually offered for lease sale their role in protecting the canyon could be examined at that time.

3. LEASE SALE SCHEDULE

Although the elimination of the nearshore blocks and the canyon blocks has satisfied two of the Commonwealth's major objections to the proposed 1992-1997 OCS oil and gas resource management program we still have a number of important concerns. Our major remaining concern lies with the lack of adequate information on the possibilities that offshore oil spills would affect environments and resources of interest to Virginia.

In response to the Draft Proposed Program document the Commonwealth took the position that no lease sales should occur in in the Mid-Atlantic OCS Planning Region until adequate information on the the oil spill question has been made available by the MMS and evaluated by the state and others. At this point there does not appear to be any realistic possibility that the MMS is willing or able to provide such information.

While the MMS has made some general statements about the possibilities of future Mid-Atlantic studies, the agency's basic position is that there now exists sufficient information to schedule lease sales in the Mid-Atlantic region for 1994 and 1997. Nothing in the existing MMS environmental studies program schedule or probable additions to the schedule will provide the kind of oil spill-related information that we seek. Indeed, the drawn out nature of the study identification, funding, and procurement process makes it almost certain that no useful study could be initiated and completed before the beginning of the 1994 lease sale process. Completing an appropriate study before the onset of the 1997 lease sale process also could be difficult, even assuming the necessary funding was made available.

Given that the MMS has said that existing information is adequate to schedule the 1994 and 1997 lease sales and given that there is little or no possibility that the MMS environmental studies program will provide adequate oil spill information in a timely manner, the Commonwealth must again ask that no lease sales be held in the Mid-Atlantic region until adequate oil spill information is made available to the state and evaluated by the state. A discussion as to what might constitute adequate information is found below in item #5a.

We are hopeful, however, that the MMS might find it possible to make a special effort to address the oil spill information need in an expeditious manner. Secretary Haskell has asked me to remind you of your personal assurance to her that the MMS would work with us on key environmental studies issues.

4. FIFTY MILE BUFFER ZONE

One of the alternatives discussed in the MMS documents is the establishment of a 50 mile buffer zone within which no OCS activity would occur. All of the blocks offshore of Virginia that now are being considered for lease sale in the Proposed Program document lie beyond that possible 50 mile buffer zone. That alternative, however, would offer additional protection against possible future nearshore lease sales until better information is made available and evaluated as to the risks and impacts associated with oil spills off Virginia's coast.

An additional and more immediate benefit to be gained from supporting the 50 mile buffer zone alternative is that most of the blocks being considered offshore of North Carolina would fall within that zone. The North Carolina coast juts out onto the continental shelf to such a degree that it reduces the shelf in that area to a relatively narrow strip. This is important to Virginia because a great many of the marine species that are found in the waters off Virginia's Atlantic coastline and in the Chesapeake Bay pass through that area during one or more periods of their life cycles. Oil spills and any chronic oil seepage in that area, therefore, could have direct and significant, even catastrophic effects on one or more species of interest to the Commonwealth. In addition, oil from spills offshore of North Carolina could reach our shores and adjacent coastal and offshore waters.

The exploration and possible development of those blocks, therefore, represents a potential threat to the Commonwealth. Consequently, the Commonwealth of Virginia asks that a 50 mile buffer be established for the Mid- and South Atlantic OCS regions.

4. THE AREA EVALUATION AND DECISION PROCESS

As written the Area Evaluation and Decision Process (AEDP) now appears to offer an improved opportunity for problem identification, evaluation, and resolution. The AEDP, as described, appears to allow the Commonwealth increased effectiveness in its participation in the management of offshore hydrocarbon resources and associated impacts. At this point, therefore, the Commonwealth looks forward to working with the MMS to see that the AEDP can be implemented in a mutually satisfactory manner.

5. INFORMATION PROBLEMS AND NEEDS

Anything as vast and complex as OCS oil and gas exploration, development, and production and associated effects always will involve major disputes over the adequacy of information available for decision making. The primary responsibility of the Minerals Management Service is facilitating the development of offshore energy resources and their related revenues. The coastal states have a similar interest, but that interest is measured against the possibilities of very direct, localized impacts on the area's environment, resources, and associated economic activities. As a result the states generally demand more and better information than the MMS thinks necessary. The current situation is no exception to that general rule.

The review of the 1992-1997 Proposed Program and the associated DEIS is further complicated by the fact that a number of OCS areas are under Presidential moratoria on lease sales until the year 2000 so that better information bases can be established for each of those areas. Since the Mid- and South-Atlantic states are a "frontier area" where there is no OCS development and only moderate and fragmentary amounts of information, there is a logical desire to have the same kind of consideration and protection that is being afforded the moratoria states.

After reviewing the MMS documents we have concluded that there does not now exist an adequate information base to begin to consider a Mid-Atlantic lease sale for 1994. Nor do we think that is likely that the necessary information can be made available in time to consider a lease sale for 1997. Our concerns regarding the adequacy of the information lie in a number of areas.

a. Oil Spills

Although the MMS has eliminated the nearshore Virginia blocks from consideration we are still concerned about the possibilities that oil spills from more offshore sites, associated tanker traffic, or pipelines could occur and have major impacts on areas, resources, and associated economic activities important to Virginia. That concern includes pipelines from offshore North Carolina sites coming ashore in Virginia and tanker traffic from those sites moving along the coast and into the Chesapeake Bay as well as tankers moving coastwise from North Carolina to the Delaware Bay refineries.

The MMS does have a data base for offshore currents and winds that has just been updated with available information. The primary use of that data base is to support the Oil Spill Risk Assessment (OSRA) model which the MMS employs to simulate oil spill trajectories so as to calculate probabilities that land and water areas will come in contact with oil spilled from specific areas. The MMS, however, has a policy that only allows applying the OSRA model to sets of blocks being considered in a specific lease sale. The MMS does not use the OSRA model in the process of developing a 5 year OCS oil and gas resource management program such as is now in process.

Our concern with the oil spill analytical situation is twofold. First, we do not think that the oceanographic data in the supporting data base is adequate. Second, we think that a special effort ought to be made to look more directly at oil dispersion so as to more specifically address our concerns before any individual lease sale processes begin.

A federally established panel of oceanographic experts recently concluded that the oceanographic data base for the key area of interest to North Carolina was not sufficient. The area offshore of Virginia has essentially the same quality and quantity of data. As a result of the findings of that panel, the MMS is in the process of awarding contracts to improve that data base. Approximately $2.5 million is to be awarded for a literature analysis and field work with the field work obviously being the more costly of the two elements. The study area will run from Cape Hatteras to Cape Henry at the mouth of the Chesapeake Bay and will range offshore for some considerable distance.

The Commonwealth of Virginia asks that a somewhat similar but less expensive study be conducted for the area from Cape Henry to Cape May at the mouth of the Delaware Bay. Recent conversations with researchers have suggested that this study could be carried out at a lesser cost in part because of what would be learned from the North Carolina study. In addition, it may be possible to concentrate more on some relatively inexpensive approaches to the study of oil dispersion instead of the more costly standard oceanographic measurements.

b. Pipelines

Even if there is no oil and gas development offshore of Virginia there could be hydrocarbon finds offshore of North Carolina. If so, there is a very high probability that pipelines will come ashore in Southeastern Virginia. The Final EIS should specifically address possible pipeline impacts in Virginia, whether originating offshore of Virginia or North Carolina, in sufficient detail to allow the state, the coastal planning districts and their member local governments, and other interested parties to have a much clearer understanding of what is at stake. Questions about onshore facilities, wetlands impacts, water demands, disposal of process water, safety and similar concerns should be addressed in such an analysis. Those questions should be addressed before individual lease sale processes begin.

c. Socioeconomic and Environmental Analyses

There appears to be widespread dissatisfaction among coastal states with the socioeconomic and environmental analyses provided by the MMS and its contractors. In general, there appears to be a consensus that the analyses are badly flawed and that the MMS and its contractors have seriously underestimated possible impacts and have essentially ignored those decision factors which cannot be given a monetary value.

The states are being asked to risk significant, even potentially catastrophic impacts in order to facilitate the development of hydrocarbon resources that will bring little net benefit to state governments, local governments, and the average citizen. The MMS must do a better job of estimating environmental impacts and the socioeconomic costs to states and localities. Then the activities likely to result from the the 5 year OCS program can be properly reviewed by the states, local governments, and other interested parties.

It is essential that the MMS respond to the detailed questions being raised by North Carolina and several other states in such a way that all interested parties can see the full range of questions being asked and the complete MMS answers to those specific questions.

d. Other Information Issues

A number of other information needs were listed in the Commonwealth's response to the Draft Proposed Program document, and additional items are given in the attached comments of other reviewers. Those questions also should be addressed by the MMS.

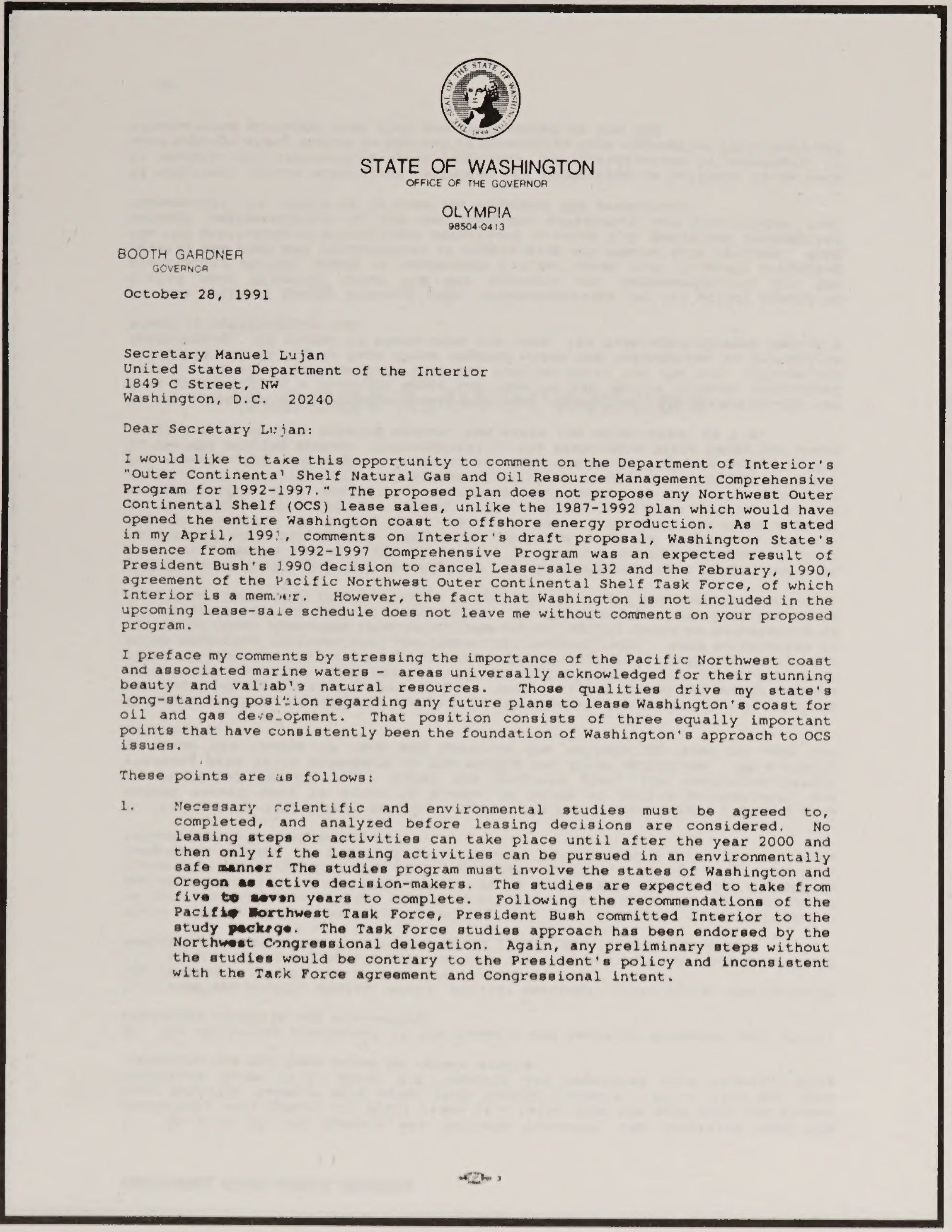
In conclusion we think that our concerns and requests are reasonable and hope that the Minerals Management Service will work with us to reach mutually satisfactory resolutions.

Sincerely,

Keith J. Buttleman

Attachments

CC: The Honorable Elizabeth H. Haskell
Mr. Bruce Weetman, Mid-Atlantic MMS



STATE OF WASHINGTON
OFFICE OF THE GOVERNOR

OLYMPIA
98504-0413

BOOTH GARDNER
GOVERNOR

October 28, 1991

Secretary Manuel Lujan
United States Department of the Interior
1849 C Street, NW
Washington, D.C. 20240

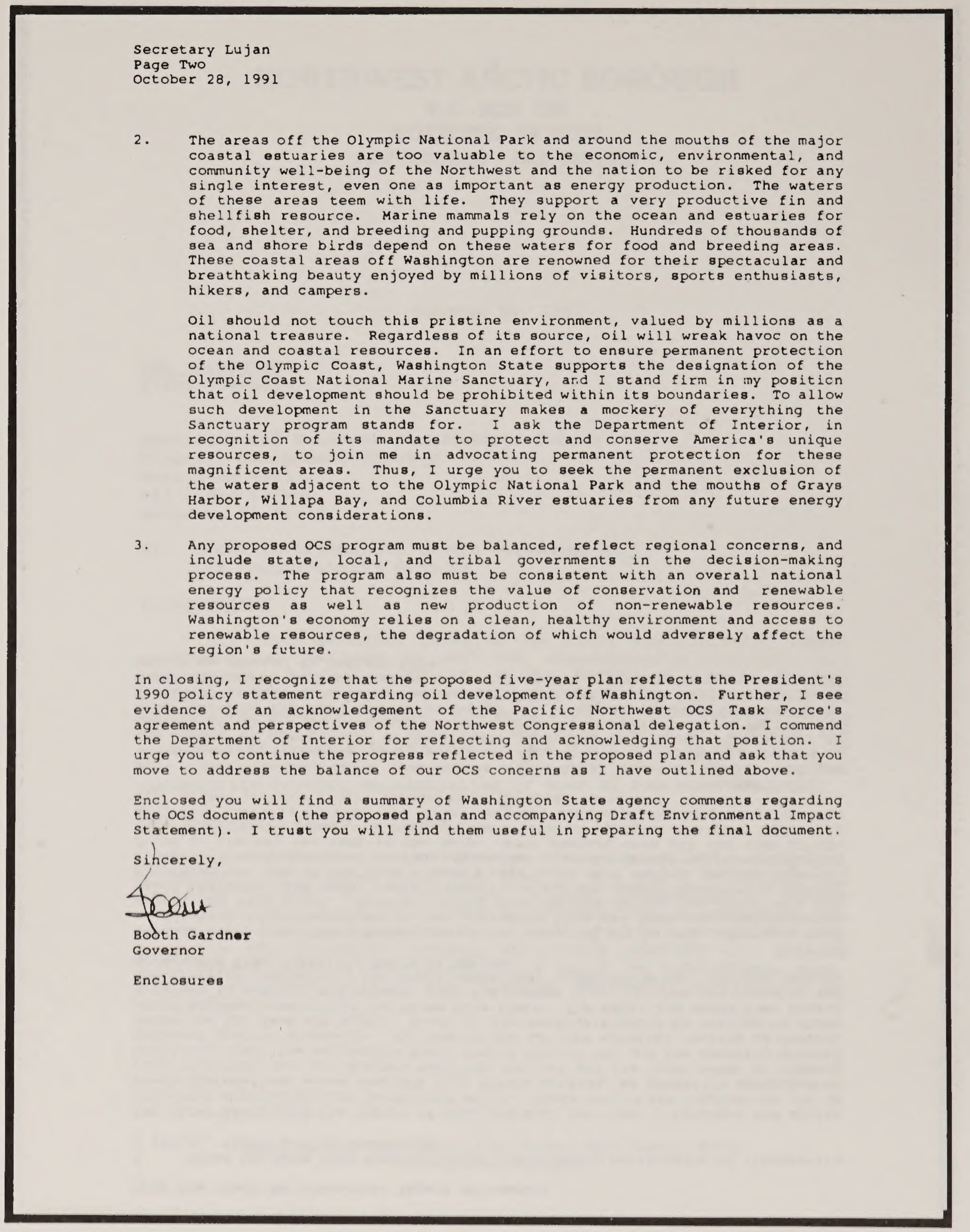
Dear Secretary Lujan:

I would like to take this opportunity to comment on the Department of Interior's "Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program for 1992-1997." The proposed plan does not propose any Northwest Outer Continental Shelf (OCS) lease sales, unlike the 1987-1992 plan which would have opened the entire Washington coast to offshore energy production. As I stated in my April, 1991, comments on Interior's draft proposal, Washington State's absence from the 1992-1997 Comprehensive Program was an expected result of President Bush's 1990 decision to cancel Lease-sale 132 and the February, 1990, agreement of the Pacific Northwest Outer Continental Shelf Task Force, of which Interior is a member. However, the fact that Washington is not included in the upcoming lease-sale schedule does not leave me without comments on your proposed program.

I preface my comments by stressing the importance of the Pacific Northwest coast and associated marine waters - areas universally acknowledged for their stunning beauty and valuable natural resources. Those qualities drive my state's long-standing position regarding any future plans to lease Washington's coast for oil and gas development. That position consists of three equally important points that have consistently been the foundation of Washington's approach to OCS issues.

These points are as follows:

1. Necessary scientific and environmental studies must be agreed to, completed, and analyzed before leasing decisions are considered. No leasing steps or activities can take place until after the year 2000 and then only if the leasing activities can be pursued in an environmentally safe manner The studies program must involve the states of Washington and Oregon as active decision-makers. The studies are expected to take from five to seven years to complete. Following the recommendations of the Pacific Northwest Task Force, President Bush committed Interior to the study package. The Task Force studies approach has been endorsed by the Northwest Congressional delegation. Again, any preliminary steps without the studies would be contrary to the President's policy and inconsistent with the Task Force agreement and Congressional intent.



2. The areas off the Olympic National Park and around the mouths of the major coastal estuaries are too valuable to the economic, environmental, and community well-being of the Northwest and the nation to be risked for any single interest, even one as important as energy production. The waters of these areas teem with life. They support a very productive fin and shellfish resource. Marine mammals rely on the ocean and estuaries for food, shelter, and breeding and pupping grounds. Hundreds of thousands of sea and shore birds depend on these waters for food and breeding areas. These coastal areas off Washington are renowned for their spectacular and breathtaking beauty enjoyed by millions of visitors, sports enthusiasts, hikers, and campers.

   Oil should not touch this pristine environment, valued by millions as a national treasure. Regardless of its source, oil will wreak havoc on the ocean and coastal resources. In an effort to ensure permanent protection of the Olympic Coast, Washington State supports the designation of the Olympic Coast National Marine Sanctuary, and I stand firm in my position that oil development should be prohibited within its boundaries. To allow such development in the Sanctuary makes a mockery of everything the Sanctuary program stands for. I ask the Department of Interior, in recognition of its mandate to protect and conserve America's unique resources, to join me in advocating permanent protection for these magnificent areas. Thus, I urge you to seek the permanent exclusion of the waters adjacent to the Olympic National Park and the mouths of Grays Harbor, Willapa Bay, and Columbia River estuaries from any future energy development considerations.

3. Any proposed OCS program must be balanced, reflect regional concerns, and include state, local, and tribal governments in the decision-making process. The program also must be consistent with an overall national energy policy that recognizes the value of conservation and renewable resources as well as new production of non-renewable resources. Washington's economy relies on a clean, healthy environment and access to renewable resources, the degradation of which would adversely affect the region's future.

In closing, I recognize that the proposed five-year plan reflects the President's 1990 policy statement regarding oil development off Washington. Further, I see evidence of an acknowledgement of the Pacific Northwest OCS Task Force's agreement and perspectives of the Northwest Congressional delegation. I commend the Department of Interior for reflecting and acknowledging that position. I urge you to continue the progress reflected in the proposed plan and ask that you move to address the balance of our OCS concerns as I have outlined above.

Enclosed you will find a summary of Washington State agency comments regarding the OCS documents (the proposed plan and accompanying Draft Environmental Impact Statement). I trust you will find them useful in preparing the final document.

Sincerely,

Booth Gardner
Governor

Enclosures

WASHINGTON STATE AGENCY COMMENTS

1. On p.15 of the Summary and Decision Document, the assertion that OCS production will reduce oil spill risks is a relic from the days when MMS argued that domestic tankers were safer than foreign vessels. While this may make intuitive sense (i.e. since U.S. vessels are regulated more closely) this reasoning has not been borne by recent events.

2. The following statements in the Summary and Decision Document (pp. 27-28) regarding wildlife are misleading:

"... some sea otters, whales, seals, stellar sealions, polar bears, and walruses may (emphasis added) die if they are exposed to oil."
"... if accidental oil spills were to occur and they are exposed, some individual seabirds, shorebirds and waterfowl would likely die." (emphasis added)

Those statements are not only misleading, but also are gross understatements. We know from the Exxon Valdez that tens of thousands of seabirds and hundreds of sea otters did in fact die when oiled. It is also highly speculative for MMS to claim that these populations will regenerate quickly. We can only hope that long-term studies of the ecology of Prince William Sound will provide more information and some answers.

3. In the 1987-1992 5-Year Leasing Program, the Washington-Oregon planning area ranked second only to areas in Alaska in terms of marine productivity and environmental sensitivity. Under the proposed plan, the Washington-Oregon planning area falls somewhere in the middle for those qualities. We strongly question the change in rank and question the methodology used to make the evaluation.

The environmental sensitivity analysis by the Minerals Management Service for the Washington-Oregon planning area is low. That analysis scores our sandy beaches relatively low. The sandy beaches off Washington's coast is habitat for razor clams (Siliqua patula) and Dungeness crab (Cancer magister), both extremely high value resources (recreational and commercial respectively). Loss or injuries to either of these resources (resulting from any oil spill) would be devastating to the economies of our coastal communities. We therefore conclude that the score should be higher than that indicated in Appendix 10-B. (of the Decision Document)

The State of Washington has developed a "Resource Compensation Table" for cost recovery purposes and will use it in lieu of resource damage assessments (rda) associated with oil spills. The outer northern coast of Washington has the highest score for the entire state and is the basis from which all other regions in the state score (on the table). The scoring considers habitat, marine mammals, birds, fish, shellfish, and recreational uses. The MMS scores given for biota do not coincide with our assessment of these resources on the outer coast. For example, the scores given both for juvenile and adult fish are ranked as 3's in the MMS scoring system. Coincidentally, the Washington State ranks the above factors on a similar scoring system, but ranks the outer coast as 5's.

We are concerned that the sensitivity rankings for each of the regions by MMS was done primarily on a relative basis and less on the merits of each individual region. We also have concerns that the regions which had the most information available scored higher than those regions where the information is lacking or forthcoming. If either of these were the case, the Washington-Oregon region's score is artificially low.

4. The National Energy Strategy (NES) recommendations for oil policy should be styled more directly after the NES approach and recommendations for the electricity sector, where it recommends a clear least cost strategy comparing equally the cost and availability of supply side and demand side options. With the NES prediction of significant reductions in total U.S. petroleum consumption through implementation of its own moderate efficiency and alternative fuel recommendations, there is no need for expanded OCS production.

In addition, unless subsidized, expanded OCS production is unlikely to be able to compete with inexpensive world supplies. If subsidization is necessary, it more appropriately should be applied in developing more aggressive efficiency and alternatives programs than that now recommended by the NES.

From the Draft Environmental Impact Statement:

1. Under the Base Case description of the existing environment of alternative I (IV.D), there are two omissions:

The first deals with the impact of drilling muds and other discharges and spills from both exploratory and production wells. Those solids and liquids can and do reach the seafloor where they not only affect animals, as generally described on page IV.D-208, but can subject both the spiller and the land owner to cleanup liability under the Washington Model Toxics Control Act and the recently enacted Sediment Quality Standards. As long as the spilled material remains on federal lands the Act does not apply. However, the materials could be carried to state owned aquatic land within the three mile limit. The materials would then create a potential cleanup and natural resource damage liability for the operator and the state as landowner. The state would want indemnification from the federal government from liability for such spills.

Second, there should be a discussion of the impact of oil on kelp. Previous work on floating kelp (Macrosystis) had indicated that oil does not significantly affect the kelp plant. However, field observations during the Tenyo Maru oil spill indicated that under certain conditions oil may damage Nereocystis causing bleaching and loss of the plant. Such a loss would have serious habitat impacts. Fisheries biologists noted that during the spill, young-of-the-year rockfish were found in the top few feet in the kelp. Both contact with oil and loss of the kelp plant could result in a significant loss of young-of-the-year fish. In addition, there is concern that oiled kelp may sink exposing benthic animals to oil, either through direct ingestion or physical contact.

2. Under the cumulative alternative (IV.D-613), impacts by oil and gas development on intertidal rocky areas are described as being small compared to the impact of other forms of human use, including pollution. Therefore, no impacts of oil and gas development are expected to be seen. This may be true for other parts of the OCS (however unlikely) but it is not the case in Washington. The rocky intertidal area on the coast of Washington is not subjected to heavy human use or to pollution other than oil spills. The statement in the DEIS should be changed to reflect this.

Local Government

NORTHWEST ARCTIC BOROUGH
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KOTZEBUE, AK 99752
(907) 442-2500 / FAX 442-2930

October 29, 1991

VIA FACSIMILE
(703) 787-1010

Environmental Projects Coordination Branch
Minerals Management Service
Mail Stop 4320
381 Elden Street
Herndon, VA 22070

RE: Draft Environmental Impact Statement on
OCS Comprehensive Program

INTRODUCTION

This correspondence concerns the draft environmental impact statement on the 1992 to 1997 OCS comprehensive program. All comments are made on behalf of the Northwest Arctic Borough ("NAB"). There are two areas that particularly concern NAB, the Chukchi Sea and Hope Basin. The main focus of this correspondence concerns Hope Basin. However, the DEIS fails to address the impacts that leasing in the Chukchi Sea would have on the people of the Northwest Arctic Borough. The analysis of such impacts necessarily involve consideration of much of the same material.

THE NORTHWEST ARCTIC BOROUGH

The Northwest Arctic Borough is a home rule municipal government, chartered under the laws of the State of Alaska and includes within its boundaries eleven predominantly Native villages. The Borough has the responsibility of promoting the welfare of its residents. Neither the draft EIS nor the laws that underlie the proposed program adequately address and protect subsistence uses or aboriginal title based on subsistence uses. Eleven villages within the Borough actively participate in subsistence use.

Ambler, Buckland, Candle, Deering, Kiana, Kivalina, Kobuk, Kotzebue, Noatak,
Noorvik, Selawik, Shungnak

HOPE BASIN

Introduction

The Northwest Arctic Borough has submitted written comment and oral testimony strongly urging deferral of the Hope Basin sale because of the environmental sensitivity of the area, the paramount importance of subsistence use, and the possible issue of aboriginal title. There has been use and occupancy of the sea ice within the area for subsistence purposes for thousands of years. Currently, the only statutes protecting subsistence uses in the sea outside the three mile limit operate by exempting subsistence uses. The Marine Mammal Protection Act and the Polar Bear Convention specifically exclude subsistence uses, and has been held to charge the federal government with a trust responsibility to protect subsistence uses. The level of care required of the federal government is satisfied by compliance with other federal statutes, including National Environmental Policy Act ("NEPA"). See e.g., People of Togiak v. U.S., 470 F. Supp. 423 (D.C.D.C. 1979) and North Slope Borough v. Andrus, 642 F.2d 589 (D.C. Cir. 1980). Although these statutes and case law are of some comfort, their protection in practice is grossly inadequate, and they do nothing to address pending potential claims of aboriginal title. The draft EIS also fails to address aboriginal title.

Aboriginal Title

More recently, the United States Supreme Court, in Gambell v. Lujan, addressed OCS subsistence uses, holding that subsistence uses on the OCS are not protected by the Alaska National Interest Lands Conservation Act (ANILCA), because ANILCA did not extend to the OCS, but is limited to the territorial sea. On remand, the Ninth Circuit held that aboriginal title based on subsistence use was not extinguished on the outer continental shelf by the Alaska Native Claims Settlement Act (ANCSA). Currently, there is litigation in several courts regarding aboriginal title. The United States Supreme Court currently has original jurisdiction over a case involving the State of Alaska and the United States. It is likely that subsistence users holding aboriginal title may seek to intervene in this case.

There is a high degree of likelihood that villages on the coast could prove subsistence use and occupancy sufficient to establish aboriginal title to proposed lease sale areas or a substantial portion of these areas. Since aboriginal title is an exclusive right, it could not be interfered with by any activity or use. The United States may transfer its interest in the property, but any such interest will be subject to preexisting rights of aboriginal title. As a practical matter, those who receive this

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title, subject to aboriginal title, receive nothing. They may have legal title, but their equitable use of the property is precluded by the aboriginal title claims of subsistence users. Aboriginal title rights can only be extinguished by an act of congress. The draft EIS fails to address any issues of subsistence use as it relates to claims of aboriginal title.

Subsistence Uses and Culture

The data presented also fails to specifically and adequately address Native subsistence uses and culture. Several of the areas proposed for consideration in the lower 48 states are given great deference because of their location close to large population centers. Remote, sparsely populated coastal areas of Alaska should be treated with similar deference. In fact, northern California and part of the Atlantic has been eliminated from the program because these areas are merely "contentious." Unlike populated areas of the lower 48 states, Alaska coastal villages are primarily reliant on marine subsistence for food itself, and a complex subsistence economy. Other villages are a part of the complex subsistence economy of the Inupiat people. They have no infrastructure or alternative resources to sustain survival. If any burden should exist, it should be placed on industry who has the means for distributing it, instead of on a delicately balanced environment where any burden at all would be permanently devastating to the livelihood and culture of entire communities of people.

The draft EIS does consider some impacts to the Inupiat people of the North Slope Borough ("NSB"). The base case analysis addresses the increased urbanization of the North Slope Borough at IV.D-227:

> This oil-fueled urbanization also brings problems. Changing lifestyles, especially among the young, and increase in drug and alcohol abuse, and an increase in domestic violence are all effects to be borne. Interacting with this urbanization is the Inupiat sociocultural system, which is rooted in subsistence activities. 'This system dictates the organization of task groups that carry out subsistence-related activities as well as the traditional forms of consumption, sharing, and bartering of subsistence goods. The sociocultural system also includes the ways in which kinship, leadership, and the learning of role expectations and traditional wisdom are organized. Finally, it includes the complex of Inupiat cultural values that animate and make meaningful such institutions as the subsistence system, sharing networks, and the kinship system. These values include strong ties to Native foods, to the North

Slope environment and its wildlife, to the family, and to the virtues of sharing the proceeds of the hunt.

The same impacts on the Northwest Arctic Borough are not specifically addressed. The analysis does go on to state that "the Red Dog Mine north of Kotzebue has increased opportunities for personal income among the Inupiat in the NANA region but, at the same time, has introduced wildlife disturbance and pollution of undefined proportions that could have human-health (through consumption of subsistence resources) and other social implications." (IV.D-227) Like the North Slope Borough, the social system in the Northwest Arctic Borough "is primarily sustained by subsistence activities." (II-12) However, the draft EIS fails to consider the impacts upon the Inupiat people of the Northwest Arctic Borough, and does not meet the "hard look" required by NEPA.

There is no doubt that North Slope Borough subsistence uses and culture will be crushed by any prospective development in the OCS. However, the same community impacts are just as likely to occur to the villages in the Northwest Arctic Borough. Further, subsistence use is not limited to areas closest to the coast, and coastal villages are not exclusively at risk. Fish and marine mammals have been taken for thousands of years, and traditional hunting and fishing grounds may extend inland many miles from areas which are now proposed for consideration. Vast inland areas of the borough are also within the borough's Coastal Zone Management Region. Subsistence harvest is a year round activity. The communities closest to the proposed lease sale area rely most heavily on marine and coastal resources. While marine mammals are a prime source of subsistence, several species of fish are also integral to subsistence use. Any damage to subsistence resources would have a direct and devastating impact on communities in the Hope Basin area. No amount of money would be able to restore life to the delicate balance that now exists between the communities and their environment on which they depend for their daily existence. Loss of Native lives and Native culture are not temporary losses that are expected to be replaced by "recruitment from the next generation." No other communities in the United States face such a severe threat from the OCS program. The DEIS presents an unfounded inference that NAB Native subsistence users will be just fine regardless of oil and gas development in the OCS. Despite the admitted significant threats to Inupiat subsistence resources, the DEIS is devoid of any meaningful discussion on how the predicted major effects on subsistence species will impact the character and quality of community life in Inupiat villages. In one instance, the DEIS merely states "in the event that noise and disturbance disrupted the harvesting of bowhead whales, there would be a loss of social and cultural values." (IV.A-42) This statement is

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limited to the Inupiat of the North Slope Borough, and its effects are not analyzed. Yet the loss of subsistence resources for an entire year is considered a "major finding" of the DEIS. The villages of both the NSB and NAB are virtually ignored, and secondary impacts are not even considered. The lack of alternative food sources is not discussed.

It goes without saying that impacts on Native subsistence uses and culture are established issues for review under NEPA and its regulations. North Slope Borough v. Andrus, 642 F.2d 589, 593 (D.C.Cir. 1980). Indeed, environmental effects, as a matter of textbook law include impacts on the human environment. 40 C.F.R. § 1508.14. If these values are presently unquantified, MMS is required to "identify methods and procedures required by [NEPA] to insure that presently unquantified environmental amenities and values may be given appropriate consideration." Id. at § 1507.2(b). Even in the worst case, where information on reasonably foreseeable significant adverse effects on the human environment is incomplete or unavailable, an EIS must still contain:

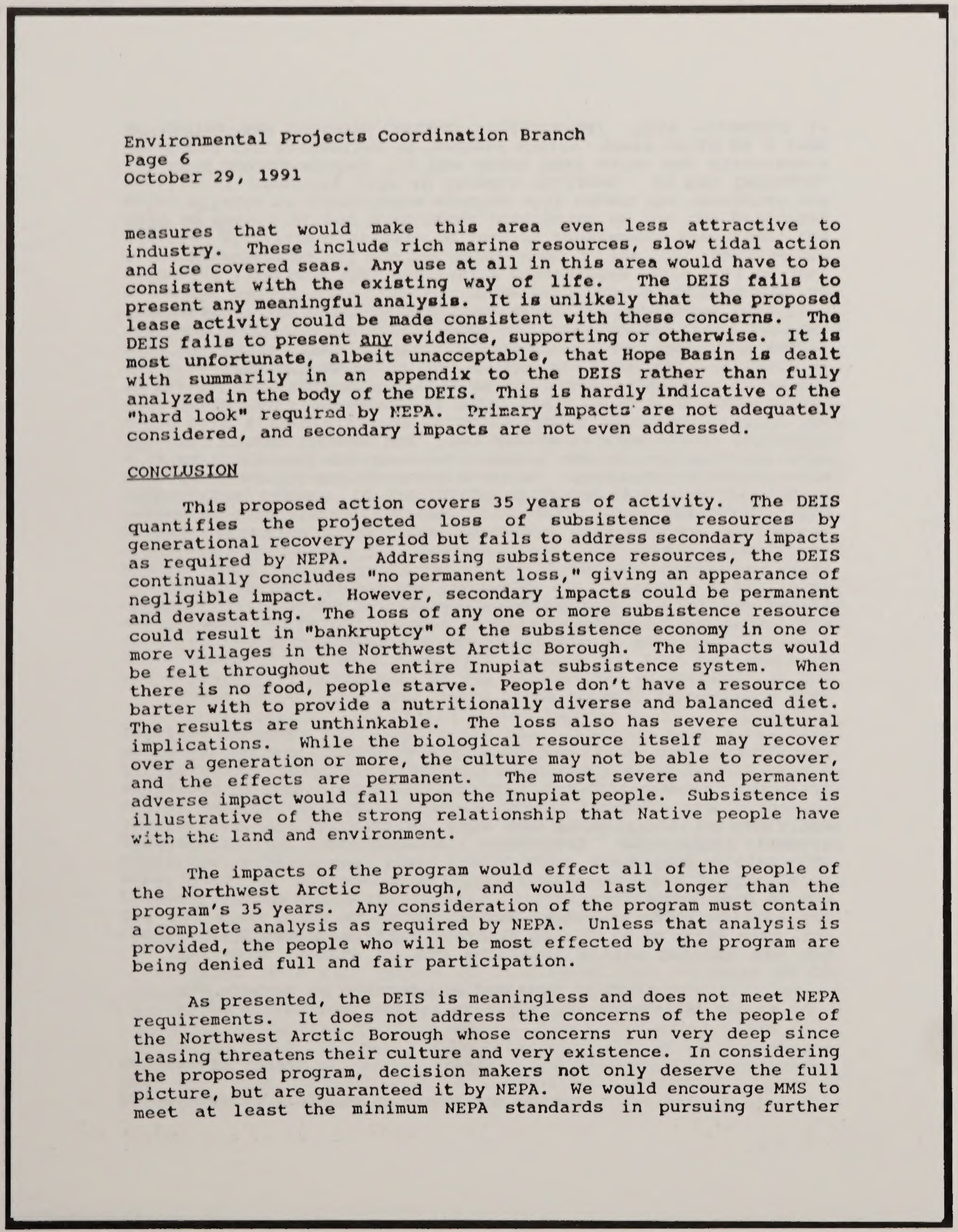
> (1) A statement that such information is incomplete or unavailable; (2) a statement of the relevance of the ...information...(3) a summary of existing credible scientific evidence which is relevant..., and (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods...

Id. at 1502.22(b). None of these procedures were followed.

There are other significant features in the Hope Basin area. The coast, lagoons and wetlands in the Cape Krusenstern National Monument are important habitat for shorebirds and waterfowl, several species of fish, marine mammals, bear, fox, and shellfish. The Bering Land Bridge National Preserve is also an important habitat for birds, fish, and marine mammals. The primary and secondary impacts were not fully developed in the DEIS.

Several coastal areas contain a high concentration of significant prehistoric and historic sites. According to the Alaska State Historic Preservation Office, a large number of these sites are exposed along the shore due to erosion and are thus very vulnerable to direct and immediate adverse impact if oil were to come ashore. The proposed lease should be deferred at least until these areas can be fully inventoried. The DEIS concludes that damage could result in data collection interference and permanent loss in the event of a spill.

Further, the unique climate of Alaska and the peculiar sensitivity of the Hope Basin area would require extraordinary



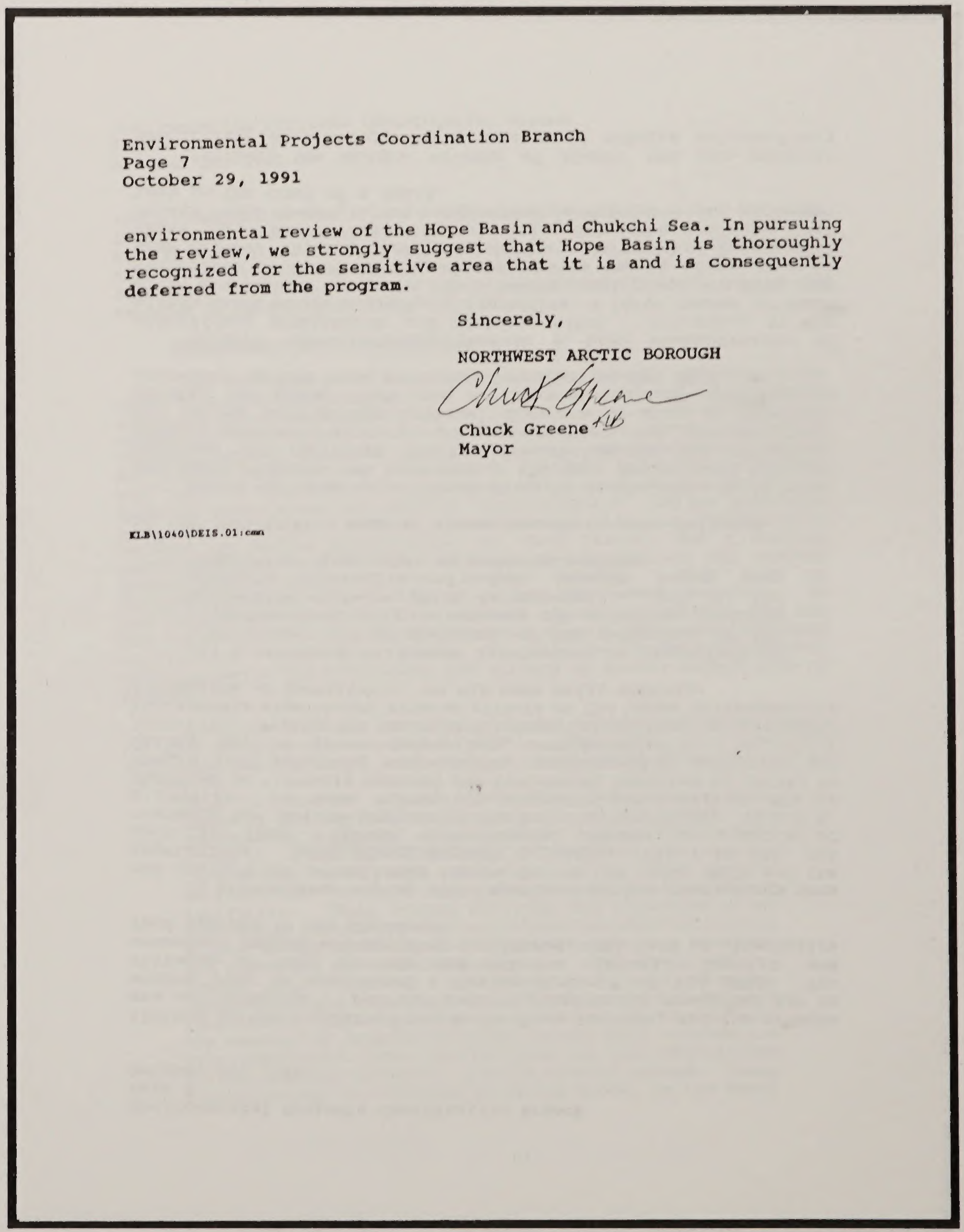
measures that would make this area even less attractive to industry. These include rich marine resources, slow tidal action and ice covered seas. Any use at all in this area would have to be consistent with the existing way of life. The DEIS fails to present any meaningful analysis. It is unlikely that the proposed lease activity could be made consistent with these concerns. The DEIS fails to present any evidence, supporting or otherwise. It is most unfortunate, albeit unacceptable, that Hope Basin is dealt with summarily in an appendix to the DEIS rather than fully analyzed in the body of the DEIS. This is hardly indicative of the "hard look" required by NEPA. Primary impacts are not adequately considered, and secondary impacts are not even addressed.

CONCLUSION

This proposed action covers 35 years of activity. The DEIS quantifies the projected loss of subsistence resources by generational recovery period but fails to address secondary impacts as required by NEPA. Addressing subsistence resources, the DEIS continually concludes "no permanent loss," giving an appearance of negligible impact. However, secondary impacts could be permanent and devastating. The loss of any one or more subsistence resource could result in "bankruptcy" of the subsistence economy in one or more villages in the Northwest Arctic Borough. The impacts would be felt throughout the entire Inupiat subsistence system. When there is no food, people starve. People don't have a resource to barter with to provide a nutritionally diverse and balanced diet. The results are unthinkable. The loss also has severe cultural implications. While the biological resource itself may recover over a generation or more, the culture may not be able to recover, and the effects are permanent. The most severe and permanent adverse impact would fall upon the Inupiat people. Subsistence is illustrative of the strong relationship that Native people have with the land and environment.

The impacts of the program would effect all of the people of the Northwest Arctic Borough, and would last longer than the program's 35 years. Any consideration of the program must contain a complete analysis as required by NEPA. Unless that analysis is provided, the people who will be most effected by the program are being denied full and fair participation.

As presented, the DEIS is meaningless and does not meet NEPA requirements. It does not address the concerns of the people of the Northwest Arctic Borough whose concerns run very deep since leasing threatens their culture and very existence. In considering the proposed program, decision makers not only deserve the full picture, but are guaranteed it by NEPA. We would encourage MMS to meet at least the minimum NEPA standards in pursuing further environmental review of the Hope Basin and Chukchi Sea. In pursuing the review, we strongly suggest that Hope Basin is thoroughly recognized for the sensitive area that it is and is consequently deferred from the program.



Sincerely,

NORTHWEST ARCTIC BOROUGH

Chuck Greene

Chuck Greene
Mayor

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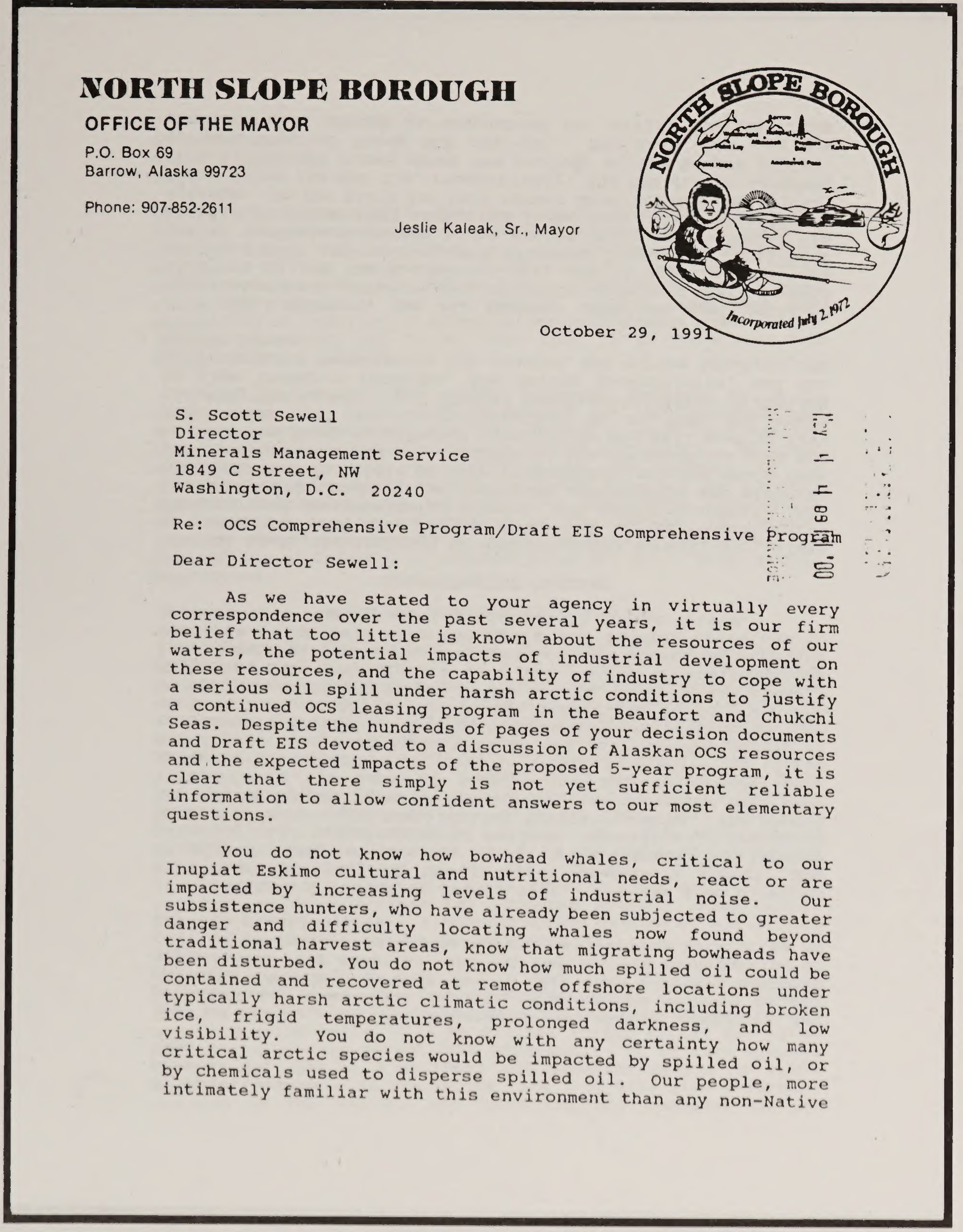


NORTH SLOPE BOROUGH
OFFICE OF THE MAYOR
P.O. Box 69
Barrow, Alaska 99723

Phone: 907-852-2611

Jeslie Kaleak, Sr., Mayor

October 29, 1991

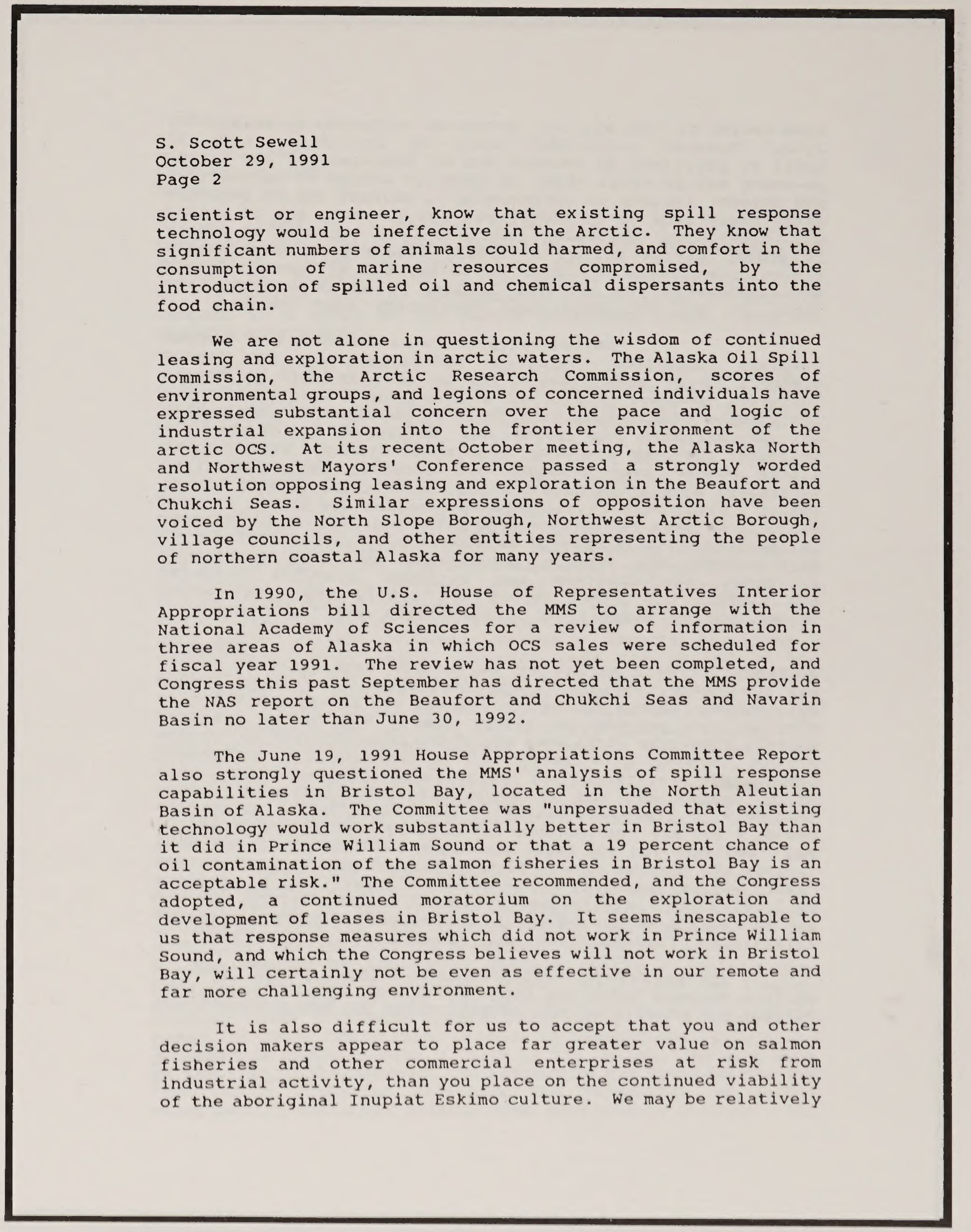
S. Scott Sewell
Director
Minerals Management Service
1849 C Street, NW
Washington, D.C. 20240

Re: OCS Comprehensive Program/Draft EIS Comprehensive Program

Dear Director Sewell:

As we have stated to your agency in virtually every correspondence over the past several years, it is our firm belief that too little is known about the resources of our waters, the potential impacts of industrial development on these resources, and the capability of industry to cope with a serious oil spill under harsh arctic conditions to justify a continued OCS leasing program in the Beaufort and Chukchi Seas. Despite the hundreds of pages of your decision documents and Draft EIS devoted to a discussion of Alaskan OCS resources and the expected impacts of the proposed 5-year program, it is clear that there simply is not yet sufficient reliable information to allow confident answers to our most elementary questions.

You do not know how bowhead whales, critical to our Inupiat Eskimo cultural and nutritional needs, react or are impacted by increasing levels of industrial noise. Our subsistence hunters, who have already been subjected to greater danger and difficulty locating whales now found beyond traditional harvest areas, know that migrating bowheads have been disturbed. You do not know how much spilled oil could be contained and recovered at remote offshore locations under typically harsh arctic climatic conditions, including broken ice, frigid temperatures, prolonged darkness, and low visibility. You do not know with any certainty how many critical arctic species would be impacted by spilled oil, or by chemicals used to disperse spilled oil. Our people, more intimately familiar with this environment than any non-Native



scientist or engineer, know that existing spill response technology would be ineffective in the Arctic. They know that significant numbers of animals could harmed, and comfort in the consumption of marine resources compromised, by the introduction of spilled oil and chemical dispersants into the food chain.

We are not alone in questioning the wisdom of continued leasing and exploration in arctic waters. The Alaska Oil Spill Commission, the Arctic Research Commission, scores of environmental groups, and legions of concerned individuals have expressed substantial concern over the pace and logic of industrial expansion into the frontier environment of the arctic OCS. At its recent October meeting, the Alaska North and Northwest Mayors' Conference passed a strongly worded resolution opposing leasing and exploration in the Beaufort and Chukchi Seas. Similar expressions of opposition have been voiced by the North Slope Borough, Northwest Arctic Borough, village councils, and other entities representing the people of northern coastal Alaska for many years.

In 1990, the U.S. House of Representatives Interior Appropriations bill directed the MMS to arrange with the National Academy of Sciences for a review of information in three areas of Alaska in which OCS sales were scheduled for fiscal year 1991. The review has not yet been completed, and Congress this past September has directed that the MMS provide the NAS report on the Beaufort and Chukchi Seas and Navarin Basin no later than June 30, 1992.

The June 19, 1991 House Appropriations Committee Report also strongly questioned the MMS' analysis of spill response capabilities in Bristol Bay, located in the North Aleutian Basin of Alaska. The Committee was "unpersuaded that existing technology would work substantially better in Bristol Bay than it did in Prince William Sound or that a 19 percent chance of oil contamination of the salmon fisheries in Bristol Bay is an acceptable risk." The Committee recommended, and the Congress adopted, a continued moratorium on the exploration and development of leases in Bristol Bay. It seems inescapable to us that response measures which did not work in Prince William Sound, and which the Congress believes will not work in Bristol Bay, will certainly not be even as effective in our remote and far more challenging environment.

It is also difficult for us to accept that you and other decision makers appear to place far greater value on salmon fisheries and other commercial enterprises at risk from industrial activity, than you place on the continued viability of the aboriginal Inupiat Eskimo culture. We may be relatively few in number, but our dependence on marine resources far predates any commercial fishery, and as the essence of our cultural identity, is more deeply felt than a purely economic dependence. Our concerns, and our region, are as deserving of critical scrutiny and a leasing and exploration moratorium as any OCS planning area.

In the Oil Pollution Act of 1990, Congress also directed that the Secretary of the Interior prepare a report, due January 31, 1991, on recovery of oil spill damages, contingency planning, and coordination of actions, specifically focussing on arctic waters and highlighting Native concerns. The report has yet to be published in final form, and questions have been raised over its lack of conclusions and recommendations. Whatever the intent of Congress in directing preparation of the OPA Report, you must agree that it was not intended purely as an academic exercise. Whether conclusions and recommendations were to be included in the report itself, or to follow based on the information gathered in the report, Congress has clearly expressed its deep concern over the levels of environmental knowledge, spill response preparedness, and attention to Native concerns which have been the basis for federal decisions to proceed with leasing and exploration in arctic waters.

COMPREHENSIVE PROGRAM

At best, the analyses of environmental sensitivity, risks to resources, and area values contained in the Comprehensive Program must be considered bizarre and result-oriented. The document is a tangle of self-serving speculation and planning concepts of such little utility in assessing program goals that its conclusions would be laughable if its consequences were not so dire for those in affected communities who will have to live with them. It is incomprehensible to us that you would classify the Beaufort and Chukchi Sea Planning Areas as regions of high industry interest, low marine productivity, and low environmental sensitivity for coastal and marine habitats and marine biota.

Shell Western, the oil company with the most drilling experience in the Chukchi Sea, recently announced that it would sell off all of its Alaskan assets, and it appears from just released well information that reserves located by Shell were not of sufficient volume to be economically recoverable. In addition, neither 1991 arctic OCS lease sale netted significant revenue. In the EIS's for both recent Beaufort and Chukchi Sea Lease Sales 124 and 126, respectively, the MMS flatly admitted that little was known about the biology of the deeper waters, or majority, of these OCS regions. How then, can you now conclude that enough is understood to justify placing these

areas among those for which studies will be planned and leasing considered, rather than among those for which studies will be planned, but no leasing will presently be considered?

And if, as is stated, the environmental sensitivity analysis "is not an assessment of the potential effects of OCS gas and oil leasing and production activities", but rather, an analysis of the "likely response of the resource (marine biota, marine habitat, and coastal habitat) to an assumed oil spill", then you should choose a different label for the rankings. The analysis, and Table 5 listing its conclusions, are not a "broad evaluation" of anything, but a limited treatment of a narrow, though important, question which is but one aspect of an ecosystem's overall sensitivity to industrial influences. Underlying its conclusions, at least with respect to the Arctic, is bald speculation in the face of an extremely limited database as to the likely impact of spilled oil on such critical species as the bowhead and beluga whales, walrus, ice seals, polar bear, migratory birds, arctic fishes, and the marine invertebrates upon which the entire fragile ecosystem is based.

Similarly, the establishment of figures of Net Social Value (NSV) and Risked Net Social Value "to compare the relative economic benefits and environmental costs of proceeding with the development of all the economically recoverable hydrocarbon resources in each area considered for leasing" is an exercise which by design is far removed from the reality of the debates over development in some areas. To the extent that an OCS area has not yet been subject to industrial influences, and concerns are centered less around easily quantifiable economic trade-offs, this NSV analysis is not at all useful in assessing the costs and benefits of its development as compared to areas with industrial, commercial, and recreational histories. In the Arctic, the most important values at risk are not at all quantifiable in an economic sense, but are traditional, historic, aboriginal cultural values, and non-commercial wildlife values.

Perhaps more disturbing even then the use of vague analytical concepts to support leasing in little-understood arctic waters, is the degree to which the vital importance a marine-based subsistence lifestyle to the Native people of Alaska is ignored. Only tourism, recreation, and fishing are listed as the "uses of the sea likely to be most immediately affected by the program." Moratoriums on further leasing and exploration in waters offshore of large areas of the lower-48 states are acknowledged in the program as justified in light of their proximity to large population centers, their importance to sensitive resources, and the need to gather more geologic or environmental data to support sound decisions. It is with absolute certainty that we can argue that our region's people, though few in number, are as dependent as any people anywhere on the resources of the ocean, that the arctic ecosystem is as fragile and as little-understood as any area where an industrial ban is now in effect, and that the capability of industry to mitigate resource damage under arctic conditions simply has to be less than it is in milder OCS environments elsewhere.

In conclusion, the Draft Proposed Program fails to acknowledge the scope and importance of the cultural and environmental resources which are placed at risk by plans for continued leasing and development of the arctic OCS. We would support, and request the addition to the Program, of an alternative which would exclude both the Beaufort and Chukchi Sea Planning Areas from leasing until additional information is available on the environment of the region, the actual impacts of oil and industrial noise on arctic resources, and the ability of industry to respond to an oil spill under arctic conditions.

DRAFT EIS COMPREHENSIVE PROGRAM

The Draft EIS suffers from the same infirmities as the Draft Proposed Program. It is full of broad and unsupported conclusions that the proposed leasing will have only minimal or short-term impacts on wildlife and environmental resources and human populations. Significant in its absence from the massive documents is any detailed reference to the extensive impact data gathered in the wake of the Prince William Sound disaster. It is the most current data available, the most specifically applicable to Alaskan waters and wildlife species, and, as with other spills, provides the only reliable information on actual response capabilities. What actually can be accomplished in the real world to mitigate environmental impacts is at the heart of any EIS inquiry. As the primary focus of the EIS is on oil spill impacts, the entire 5-year program, or at a minimum the proposed Alaskan lease sales, should be delayed until a comprehensive review of all Prince William Sound data can be accomplished.

Of the greatest concern are the EIS' drilling and oil spill assumptions. For the cumulative case, it is predicted that 72 exploration and delineation wells, and 723 development and production wells, will be drilled in the Arctic Subregion during the 28-year period from 1994-2021. It is also assumed that there will be 7 platform and pipeline spills of 1,000 barrels or greater in the region, and 7 of like size occurring outside of the region, but involving oil produced in the

Arctic. And it is assumed that there is a virtual 100% certainty that one or more spills of 10,000 barrels or more will occur. Given the resources and cultural values at stake, the minimal understanding of the impacts of noise and oil on arctic species, and the demonstrated inability of industry to respond to a spill in far milder climates, these risks are clearly unacceptable.

While these dramatic figures are downplayed in the EIS, discussions of potential impacts are characterized by sweeping generalizations, unreferenced conclusions, and a piecemeal presentation of individual species' impacts which leaves the impression that the health of wildlife and human populations might only suffer relatively insignificant effects. We know of no case where an industrial impact affected only a single species, and are concerned about multi-generational impacts on entire ecosystems. The EIS assumes in the case of arctic marine mammal species, for example, impacts in the cumulative case as follows: bowhead whales - sublethal effects on up to 25% of the population from noise each year, and up to 20% from oil spills over the 30-year period of the proposal; beluga whales - less than a 3-year added impact from the proposal; ice seals - impacts requiring 2-3 generations (8-18 years) recovery over period of the proposal; walrus - impacts requiring 3 generations (30-45 years) recovery over the period of the proposal; polar bear - impacts requiring 5 or more generations (5-8 years per generation) recovery over the period of the proposal. Such impacts on the fragile arctic marine ecosystem could devastate the not only the wildlife species themselves, but also the traditional Inupiat culture. Nonetheless, the EIS' cavalier dismissal of the cultural impact of a single generation, or multi-generational, decline in the number or availability of even a single significant subsistence species is but one example of the document's strong bias in favor of leasing in the Arctic.

In particular, the general discussion of subsistence bowhead whaling at Section IV.D-497 is inaccurate, misleading, and insulting to the Inupiat people. The "major effects-producing agent on the bowhead whale population" is not aboriginal whaling, but the persistent impact of the decimation of the species by commercial whalers nearly a century ago. Many of the "modern shoulder guns" still used by Inupiat hunters date from that era, the hard-won annual quota is rarely reached under difficult arctic conditions, and in typically heavy ice cover traditional walrus- or bearded seal-skin boats are used in the dangerous pursuit of the whales. As with much of the rest of the document, no references are provided for the conclusions presented regarding the percentage of whales experiencing sublethal effects from subsistence whaling. All improperly unreferenced conclusions should be removed from the EIS. If this were done, we would have a clearer understanding of the paucity of knowledge upon which the 5-year program is based. In addition, the EIS could perhaps be contained in a single document of manageable size.

There are many questionable statements and conclusions made in the EIS which merit specific attention. There are repeated references to bowhead whales being observed at 4 to 20 km from drillships in the Canadian Beaufort Sea, whose "activities appeared to be characteristic of undisturbed whales, although a few exceptions occurred." (eg. IV.A-35) It should be clearly noted that migrating bowheads are more sensitive to disturbance than non-migrating whales, and that whales in the Canadian Beaufort Sea are not migrating.

In discussing the effects of the physical environment on oil and gas operations (III.B.1.d and IV.C-2), there is no recognition of the great degree to which harsh arctic conditions could be expected to impair an oil spill response effort. This important issue should be an important focus of the decision to proceed or not to proceed with leasing and exploration in the Arctic. In this regard, and given the assumption that one or more spills of 10,000 barrels or more will occur, the EIS should also contain an extensive discussion of the degree to which significant spill response operations could be expected to impact wildlife populations and subsistence hunting activities.

The EIS assumes that transportation of oil recovered in the Arctic will be transported to interconnect with the Trans-Alaska Pipeline System by 275 and 250 miles of subsea pipeline in the Beaufort and Chukchi Seas, respectively. There is insufficient acknowledgement in the EIS of the risks associated with an undertaking of this magnitude in the frontier environment of the Arctic. There is no discussion of the impossibility of pipeline maintenance during the eight or more months of solid ice cover, or the significant problems of applying existing technology to an environment characterized by harsh and unique conditions, including subsea permafrost and ice gouging.

As discussed above, the assumptions of drilling and spill rates for the Arctic are disturbing. They become even more worrisome when it is explained that "MMS uses spill rates based on historical accidents to estimate the mean number of spills assumed to occur." (IV.D-12) Given that the frontier arctic environment will stress existing technologies to or beyond their limits, the spill rates should be expected to be even higher than those predicted.

In the discussion of impacts on water quality, it is stated that exploration discharges "are not likely to exceed water quality criteria outside of a 100-m radius, or 0.03 square km around each drill site." (IV-D-24) In neither this section, nor those dealing with impacts on marine mammals, is there a discussion of the tendency of certain species, particularly ice seals and therefore polar bears, to congregate in the open water areas downstream of drill rigs. It appears that such animals would then find themselves in areas where water quality criteria have been exceeded. This issue should be addressed in the EIS.

There is but a single scientific citation in the section dealing with the impacts of the proposed alternative on pacific walrus, and that reference describes expected herd displacement and calf mortality in response to routine vessel traffic. Without further reference, however, the section concludes that effects will be minimal, and that "effects of disturbance from routine activities are not expected to be sufficiently adverse to elevate the aggregate effect of oil spills plus disturbance substantially above that for oil spills alone." There is clearly insufficient data to support this or any firm conclusion regarding impacts on walrus. Throughout the EIS, gaps in understanding of species and impacts should be clearly acknowledged.

In discussing the impacts of the base case on sociocultural systems, the EIS states that the North Slope Borough is "urbanizing." (IV.D-227) This is the repeated kind of mischaracterization contained in the EIS designed to depict a Native people abandoning their traditional culture, and to justify continued leasing which will clearly disrupt that culture. We are not "urbanizing", but simply modernizing, upgrading our standard of living, and building the same infrastructure which has been the norm for a century or more in communities in the lower-48 states which are accepted without question as being rural in character.

Also not discussed in this section or elsewhere in the EIS is the potentially extremely significant impact on small communities, particularly subsistence-based communities, of the pre-lease and pre-drilling public review process associated with the proposal. In our villages, we have already seen a dramatic disruption of community life associated with the participation of concerned residents in a seemingly endless schedule of oil and gas related public meetings. Especially for those already faced with trying to incorporate full-time cash jobs into a subsistence lifestyle, the need or desire to attend such meetings requires the sacrifice of valuable time better spent with families and friends, or engaged in job-related, subsistence, cultural, educational, recreational, or other activities. Aside from those whose job it is to participate in project reviews, many private individuals may attend thirty or more such meetings every year, each of which may last 3-5 hours. With the large number offshore leases, wells, and pipelines projected by the proposal, this is a significant sociocultural impact which deserves comprehensive treatment in the EIS.

In short, and in conclusion, the EIS is strongly biased in favor of proceeding with leasing, exploration, and development in the Arctic .although there is clearly insufficient information on the arctic marine environment, the risks posed to wildlife and cultural resources by development, and the ability of industry to mitigate oil spill related risks under arctic conditions. All unreferenced and unsupported conclusions relating to impacts should be removed from the document, and gaps in data should be properly acknowledged. The leasing program in the arctic OCS should be delayed until the impact data from Prince William Sound has been reviewed and incorporated into the EIS, and Congress has reviewed both the Oil Pollution Act of 1990 and National Academy of Sciences reports.

Sincerely,

Jeslie Kaleak, Sr., Mayor

cc: Senator Ted Stevens
Senator Frank Murkowski
Representative Don Young
Chairman Arctic Research Commission
Gov. Walter Hickel
Senator Al Adams
Representative Eileen MacLean
Northwest Arctic Borough
NSB Village Mayors
Alaska Eskimo Whaling Commission
Ron Morris, NMFS

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ambag
ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS
MAIL ADDRESS P.O. BOX 190 MONTEREY CALIFORNIA 93942 • TELEPHONE (408) 373-6116
OFFICE LOCATION 977 PACIFIC STREET

October 11, 1991

Mr. Scott Sewell
Director, Minerals Management Service
381 Eldene Street, Mail Stop 4320
Herndon, Virginia 22070-4817

SUBJECT: Review of Draft Environmental Impact Statement For the Proposed Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program for 1992-1997

Dear Mr. Sewell:

The Board of Directors of the Association of Monterey Bay Area Governments (AMBAG) is extremely frustrated by the failure of the Minerals Management Service (MMS) to respond to comments submitted last April on the draft Proposed Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program in the recently released draft Environmental Impact Statement (EIS). The work involved in preparing comments on such lengthy and formidable documents such as this draft EIS is both extremely time-consuming and costly. To have to repeatedly prepare comments for these leasing programs and to have those comments brushed aside with broad-stroke responses--if that--is a waste of taxpayer time and money.

The AMBAG Board has always taken a firm stand in opposition to any offshore oil and gas leasing activities off the entire California coastline and that stand is reiterated in this letter of comment. We request that the proposal to lease 87 tracts off of the San Luis Obispo County area be deleted from consideration and we strongly urge that the entire California coastline be permanently protected from the threat of any oil and gas leasing activities off the coast. Until a true and effective National Energy Strategy is developed which takes into account conservation, renewable energy, and alternative energy sources, this proposed program should not be considered. In response, therefore, to your request for comments on the draft EIS the AMBAG Board of Directors has the following:

- The draft EIS describes how the Proposed Program is fully compatible with the National Energy Strategy (NES). However, the NES has been widely criticized for failing to commit the nation to energy conservation and the use of alternative energy sources. In the absence of an NES that incorporates conservation, energy efficiency, and renewable energy resources, there is no justification for proceeding with the Proposed OCS Program.

- Extensive OCS leasing and development has already occurred off the coast of California along with related major industrialization of onshore coastal areas. Impacts from these activities have not been absorbed nor effectively mitigated. Until the significant issues related to previous leasing and development have been resolved, AMBAG will remain opposed to any further OCS leasing or development. AMBAG urges the deletion of all tracts off California and supports the adoption of Alternative II, the no action alternative.

- AMBAG supports those elements of the Proposed Program which reflect the OCS Policy Statement issued by the President on June 26, 1990, deferring specific areas until 2000 (although this agency does not thereby condone leasing of these areas after 2000). AMBAG requests that these components of President Bush's OCS policy statement be codified. In addition, the President's statement mandated the creation of the Monterey Bay National Marine Sanctuary, which would prohibit all oil and gas activities.

- The criteria and justifications by which environmentally sensitive tracts remain under consideration for OCS leasing activities are not adequately explained in the draft EIS.

- The draft EIS does not adequately quantify impacts and direct effects of the proposed plan on the Coastal Zone of the State of California, nor does it indicate the degree of conformance of the proposed plan with the laws, goals, and policies of the State of California including the California Coastal Act, California's federally approved Coastal Zone Management Plan, previous consistency determinations, local coastal plans, California's pipeline policy, or California's air quality standards.

- By weighing the national benefits of offshore oil development against the local socio-economic costs, MMS is not using an appropriate or equivalent standard for guiding its OCS development policy.

- Nineteen of the 87 tracts identified for leasing were the subject of a negative Consistency Determination by the California Coastal Commission issued pursuant to the Coast Zone Management Act, as determined in 1981 during consideration of the Lease Sale of #53 Proposed Notice of Sale, and should, therefore, be dropped from further consideration for inclusion in the Proposed OCS Program.

- In the draft plan there is some discussion of a change in the process used to select the 87 tracts that are to be leased off of Santa Barbara and San Luis Obispo Counties, but there is no mention of the future process that might be used for the frontier area. Future documents should explain in full detail what that process will be for frontier areas, since it is not discussed in the draft plan.

- Currently 88 of the 105 active leases in the Southern California Planning Area remain undeveloped. This is not discussed in the draft EIS and it remains unclear whether the major regional impacts that will result from their development are considered in the assignment of cumulative impacts. Why haven't these 88 tracts been developed? Why offer new tracts adjacent to leased, but undeveloped tracts? No additional leasing should occur in the Southern California Planning Area until these 88 tracts have been developed or abandoned.

- Neither the anticipated impacts from the proposed action on existing conditions and uses of the offshore and onshore affected areas or adjacent areas, specifically the impact of potential oil spills carried by northerly waters onto the Big Sur coastline, nor the cumulative impacts to migratory species, especially the endangered California Sea Otter, are adequately disclosed in the draft EIS. This is particularly disturbing in light of the creation of the Monterey Bay National Marine Sanctuary, the stated goals of the Sanctuary being to protect, preserve, and enhance the numerous coastal and marine resources and water quality of the central coast region.

- Appendix D of the draft EIS describes the current capabilities of the oil industry to respond to potential spills related to leasing in the OCS. The discussion of the location of oil spill containment and cleanup equipment serves well to highlight just how inadequate oil spill response is in the Pacific Region. Currently, there are no commercial ocean salvage vessels along the central and northern California coast dedicated to oil spill response and cleanup. San Francisco Bay has only one dedicated offshore skimming system and there is no offshore skimming capability in northern California. While there are industry-sponsored cleanup cooperatives in Humboldt Bay, San Francisco Bay, and southern California, there is no formal mutual aid agreement in place linking the cooperatives along the coast. A major segment of the central California coast from San Francisco Bay to Point Conception is void of any oil spill response capability. Yet the risk from existing marine vessel traffic along the central California coast is unacceptably high. The need for dedicated response vessels and offshore skimmers stationed along the central California coast is acute. Without this equipment, any response time would be so long as to preclude any reasonable effort of at-sea containment and cleanup. As evidenced by the draft EIS, the threat of major offshore oil spills from tanker traffic along the Pacific coast is very real. Oil spill containment and cleanup technology must be improved and made available before any further OCS leasing is proposed.

- The marine transition zone near Point Conception, where the warmer waters of southern California meet and mix with the colder waters of the central California coast, remains targeted for leasing. This transition zone creates habitats for some unique and previously undiscovered organisms, particularly on hard-rock substrate offshore. A much more thorough biological assessment of these life forms should accompany the new OCS Program.

- Adverse impacts on air quality which are likely to result from OCS activities in the proposed lease sale areas are regional in nature and oil spill impacts have been shown to be regional as well due to coastal ocean current patterns. Yet no technology presently exists to clean up or contain oil spills in the prevailing wind and sea conditions found throughout the year in the offshore waters proposed for inclusion in the Proposed Program.

- The Proposed Program does not reflect the "critical balancing" required by the OCS Lands Act and fails to select the timing and location of leasing so as to obtain a proper balance between the potential for environmental damage, the potential for discovery of oil and gas, and the potential for adverse impact on the coastal zone.

- o A major flaw in the draft EIS analysis of impacts is the assumption that all oil and gas produced as a result of the Proposed Program will be transported to shore by new or expanded pipeline systems (the safest mode of transport), except in a few instances where it is economically prohibitive. Yet, challenges by oil companies are currently being made to existing pipeline requirements in the Santa Barbara area despite earlier agreement. If history is any indicator, pipelines will be found to be economically prohibitive more often than not, thereby making the entire impact analysis of the draft EIS deficient. We request that the use of pipelines be made a mandatory requirement of this Proposed Program and all future OCS development.

- o Based on the assumptions of the various scenarios presented, including the "cumulative case", impacts to commercial fisheries due to routine activities and small oil spills are described as "inconveniences" during the 35-year life of the Proposed Program with little or no discernible economic loss. In the "base case" one or more spills are expected to result in large economic losses to the commercial fisheries, ranging from 20 to 30 percent and lasting for two seasons. The "cumulative case" concludes that impacts from the 17 assumed spills will not be discernable from normal fluctuations of commercial fisheries within the Pacific Region overall. We question these assigned levels of impacts and suggest that the draft EIS does not accurately analyze and assign risks to the commercial fisheries. The estimates for population recovery rates for fish and shellfish resources from the impacts resulting from the Proposed Program are optimistically short periods and are not supported by any documentation. The California commercial fishing industry consists, for the most part, of individually owned family businesses. These small operations are predicated upon renewable seasonal fish resources and are not able to sustain losses which are over several years in duration, such as those losses classified as "inconveniences" in this draft EIS. These factors should be fully considered when evaluating impacts to the fisheries economy.

- o AMBAG strongly requests that updated, more current, technical information be developed by MMS in support of the new Proposed OCS Program, specifically responding to the numerous points described above.

In summary, AMBAG urges the deletion of all tracts off California and supports the adoption of Alternative II, the no-action alternative. As indicated in our comments, AMBAG feels the draft EIS on the Proposed Program is deficient in numerous ways and that in order to allow a full and truly informed analysis of project alternatives and a complete disclosure of potential project impacts, the draft EIS should be revised and reissued for comment.

The Association of Monterey Bay Area Governments appreciates the opportunity to comment on the draft EIS for this very important plan that will affect the lives of all Californians, as well as the well-being of California's coastal and marine resources far into the future.

Sincerely,

Robert Nunn
President, AMBAG

RN:MP:ctb

City of El Segundo

KENDRA MORRIES
DIRECTOR OF PLANNING

October 25, 1991

Ms. Debra Purvis
Environmental Projects Coordination Branch
Minerals Management Service
381 Elden Street
Herndon, VA 22070

RE: Draft EIS for Proposed Federal Outer Continental Shelf (OCS) Comprehensive Natural Gas and Oil Resources Management Program.

Dear Ms. Purvis:

The City of El Segundo has reviewed the Draft Environmental Impact Statement for the proposed Outer Continental Shelf (OCS) Comprehensive Natural Gas and Oil Resources Management Program. We feel that the Pacific Region is an environmentally sensitive area. The south coast suffers from poor air quality, marginal water quality, overcrowded port facilities, and ground and seafloor instability. In addition, it provides a home to many endangered marine mammals and coastal birds. The Pacific Region is home to both commercial and recreational fishermen, and its scenic beauty provides recreation for millions annually.

The South Coast Air Basin suffers from the worst air quality in the nation. The Planning Department staff suggests that an intensive and complete study of the impacts on air quality from the proposed project and the alternatives be done in the final EIR. Included in this study should be impacts from the offsets to air emissions required by the Air Quality Management District (AQMD)

Water quality is marginal to poor in some areas. Staff feels that impacts to onshore support facilities, including ports, has not been fully considered, and would like to see those considerations addressed in the final EIR.

Ground and seafloor instability is prevalent in the Pacific Region Planning Area. Numerous faults, many of which are considered active, are located offshore southern California. Many of these faults are not monitored and could be potentially hazardous. Staff feels that an extensive study of offshore faults should be included in the final EIR.

In addition, we would like to see a complete list of mitigating measures for all of these areas of concern in the final EIR.

City of El Segundo
Planning Department
350 Main Street
El Segundo, California 90245-0989
(213) 322-4670 Ext. 382 - FAX: (213) 322-7137

Finally, because the Pacific Region is environmentally sensitive and geologically unstable, Planning Department staff would like to urge the USDOI to consider Alternative IV, which excludes the Pacific Regions Planning Area, in place of the proposed action.

Thank you for the opportunity to review and comment on the DEIS. We look forward to receiving and reviewing the final EIR.

Sincerely,

KENDRA MORRIES

Kendra Morries
Director of Planning

OCS.KM

September 18, 1991

Director, Minerals Management Service
381 Elden Street, Mail Stop 4320
Herndon, VA 22070-4817
Attn: Ms. Debra Purvis

Dear Ms. Purvis:

At its meeting of September 17 City Council adopted the attached resolution in response to the Draft Environmental Impact Statement for the Department of Interior Minerals Management Service's proposed Comprehensive Five Year Outer Continental Shelf Natural Gas and Oil Resource Management Program, 1992-1997.

Although leasing has been deferred in the Orange County area until at least the year 2000, we are very concerned about the EIS deficiencies and the fact that other California coastal areas are slated for leasing in the very near future. The City once again urges that more consideration be given to energy conservation alternatives.

Sincerely,

Neil Fitzpatrick
Mayor

Attachment

505 FOREST AVE • LAGUNA BEACH, CA 92651 • TEL (714) 497-3311 • FAX (714) 497-5672

RESOLUTION NO. 91.83

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LAGUNA BEACH, CALIFORNIA, RESPONDING TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE MINERALS MANAGEMENT SERVICE'S PROPOSED COMPREHENSIVE FIVE YEAR OUTER CONTINENTAL SHELF NATURAL GAS AND OIL RESOURCE MANAGEMENT PROGRAM FOR 1992-1997.

WHEREAS, the Department of Interior has issued a Notice of Request for comments on the "Draft Environmental Impact Statement" (EIS) for the Proposed Five-Year Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program for 1992 through 1997 which incorporates procedures and proposals for offshore drilling lease sales during this period; and

WHEREAS, the Department of Interior has solicited formal comments on the Draft EIS from affected states, local agencies, and interest groups; and

WHEREAS, the California Secretary for Environmental Protection has requested similar formal comments from local agencies and interested parties to assist the Governor in preparing a formal response to the Draft EIS to be submitted to the Department of Interior on behalf of the State of California; and

WHEREAS, the City of Laguna Beach supports those elements of the Draft EIS which reflect the OCS Policy Statement issued by the President on June 26, 1990 which deferred consideration of specific areas for OCS leasing until the year 2000, although the City of Laguna Beach does not express support for leasing of these areas after the year 2000.

NOW, THEREFORE BE IT RESOLVED, the City Council of the City of Laguna Beach makes the following findings in response to the Draft EIS:

The City of Laguna Beach opposes the premature consideration of 87 tracts offshore San Luis Obispo, Santa Barbara, and Ventura counties for OCS leasing after January 1, 1996; and

The Draft EIS continues to fail to provide any criteria by which these 87 tracts were selected for earlier leasing; and

The Draft EIS fails to adequately quantify impacts and direct effects of the proposed action on the Coastal Zone of the State of California, nor does the Draft EIS indicate the degree of conformance of the proposed action with the laws, goals and policies of the State of California including the California Coastal Act, California's federally-approved Coastal Zone Management Plan, previous Consistency Determinations, county Local Coastal Plans (LCPs), California's pipeline policy or California's air quality standards; and

The Draft EIS fails to address the fact that a substantial number of the 87 tracts identified for leasing offshore California were the subject of a negative "Consistency Determination" by the California Coastal Commission issued pursuant to the Coastal Zone Management Act, as determined in 1981 during consideration of the Lease Sale #53 Proposed Notice of Sale; and

The Draft Proposed OCS Program does not adequately disclose the anticipated impacts of the proposed action on existing conditions and uses of the offshore and onshore affected areas or adjacent areas, nor on cumulative impacts to migratory species; and

The Draft Proposed OCS Program does not include a sufficiently high-resolution look at the impacted area and its existing resources and uses, incorporates no "worst-case" analysis of impacts, includes no analysis of impacts on rare and unique species, nor does it adequately identify or analyze cumulative impacts which are likely to result from proposed future OCS leasing and development in conjunction with prior and planned lease sales and development activities; and

The Draft EIS fails to address the concerns and issues previously raised by local agency commentors on the Draft Proposed Program at earlier stages; and

The Draft EIS fails to adequately consider the existing or anticipated uses of the sea and seabed, including fisheries, navigation, existing or proposed sealanes, or military use areas, nor does the Draft EIS contain provisions for considering adverse regional economic and air quality impacts of OCS leasing actions on the existing economic base and air quality of each community; and

The Draft EIS fails to consider the relative marine productivity and environmental sensitivity of various OCS Planning Areas as required by the OCS Lands Act, nor does the Draft EIS consider the equitable sharing of developmental benefits and environmental risks among the various regions of the United States; and

The Draft EIS does not reflect the required "critical balancing" mandated by the OCS Lands Act, and fails to select the timing and location of leasing so as to obtain a proper balance between the potential for environmental damage, the potential for discovery of oil and gas, the potential for adverse impact on the coastal zone and the fact that no technology presently exists to clean up or contain oilspills in the prevailing wind and sea conditions found throughout the year in the offshore waters proposed for inclusion in the Proposed Comprehensive OCS Program; and

The Draft EIS fails to provide a justification for proceeding with the described OCS leasing actions in the absence of a federal "least-cost" national energy policy which incorporates conservation, energy efficiency, and renewable energy resources; and

Key environmental studies identified by the National Academy of Sciences and the Minerals Management Service are necessary before informed decisions about the proposed actions can be made, and there is no indication that these studies will be completed and analyzed in time to affect decisions affecting the sale of tracts located in the Southern California OCS Planning Area; and

The City of Laguna Beach has reviewed the Draft EIS for the Proposed Natural Gas and Oil Resource Management Comprehensive Program and found that it does not address local agency concerns, applicable Federal Laws, regional economic implications, or any of the other factors indicated above; and

The City has applied for marine sanctuary status through another Federal agency for areas off the Orange County coast, a fact which should be considered by the Minerals Management Service before finalizing future leasing plans.

NOW, THEREFORE BE IT FURTHER RESOLVED, the City Council of the City of Laguna Beach hereby adopts this resolution in response to the Draft EIS for the Proposed OCS Natural Gas and Oil Resource Management Comprehensive Program by the Department of Interior; and further resolves that this resolution be forwarded to appropriate Federal and State legislators and officials.

ADOPTED this 17th day of September, 1991.

/s/ Neil Fitzpatrick
Mayor

ATTEST:

/s/ Verna L. Rollinger
City Clerk

I, Verna L. Rollinger, City Clerk of the City of Laguna Beach, certify that the foregoing Resolution was duly adopted at a Regular meeting of the City Council of said City held on September 17, 1991.

AYES: COUNCILMEMBERS: Gentry, Lenney, Christoph, Collison, Fitzpatrick
NOES: COUNCILMEMBERS: None
ABSENT: COUNCILMEMBERS: None
ABSTAIN: COUNCILMEMBERS: None

Verna L Rollinger
City Clerk of the City of
Laguna Beach, California

CITY OF MONTEREY
Colton Hall, California's Constitution Hall in 1849
CITY HALL, MONTEREY, CALIFORNIA 93940

RECEIVED
OEAD

October 28, 1991

Mr. Scott Sewell
Director
Minerals Management Service
381 Eldene Street, Mail Stop 4320
Herndon, Virginia 22070-4817

Re: Review of Draft Environmental Impact Statement for the Proposed Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program for 1992-1997

Dear Mr. Sewell:

Thank you for the opportunity to provide comments on the draft Environmental Impact Statement (EIS). The City of Monterey was pleased to see the incorporation of the President's Year 2000 deferral decision into the project description for the program and the subsequent reduction in the number of sales, smaller acreage, and targeted planning areas. In addition, the City is pleased with the 90-day comment period on the EIS, as we feel this enhances the environmental review process.

However, the City of Monterey is disappointed to see that many of our comments submitted last April, as well as the comments submitted by AMBAG and the County of Santa Cruz at that time, have not been addressed in the draft EIS. Specifically, our concerns are, as follows:

1) The City finds the EIS deficient in criteria and justifications by which environmentally sensitive tracts remain under consideration for Outer Continental Shelf leasing activities. Criteria establishing the reasons these tracts are still not included in the program and the analysis of potential impacts are not included in the EIS.

2) Appendix D of the draft EIS describes the current capabilities of the oil industry to respond to potential spills related to leasing in the Outer Continental Shelf. However, the EIS minimizes the fact that a major segment of the Central California coast from San Francisco Bay to Point Conception is void of any oil spill response capability. The risk from existing marine vessel traffic along the Central California coast is unacceptably high and is not identified as a significant impact in the EIS. Oil spill contaminant and cleanup technology need to be improved and made available before any further Outer Continental Shelf leasing is proposed. This issue needs to be included in the EIS.

3) The City of Monterey disputes conclusions in the EIS regarding potential impacts to the commercial fishing industry. The EIS states that small oil spills are described as "inconveniences" during the 35-year life of the program with little or no discernable economic loss and goes on to state that the cumulative case from 17 assumed spills will not be discernable from normal fluctuation of commercial fisheries within the Pacific region overall. However, the EIS also states that one or more local oil spills is expected to result in large economic loss to commercial fisheries ranging from 20% to 30% and lasting for two seasons. While we are not in a position to dispute the numbers, due to a lack of documentation in the EIS, the local impact to commercial fisheries in Monterey Bay would be severe and should be stated as such.

4) The draft EIS concludes that no substantive land use impacts are expected in the Pacific coastal communities. The EIS should include the fact that the City of Monterey prohibits the designation of on-shore oil and gas support facilities within the City of Monterey without a vote of the people (Measure G, passed in 1986). In addition, the City's Local Coastal Plans contain no sites designated for heavy coastal-dependent industries.

5) The City of Monterey supports the comments provided to your office by the Association of Monterey Bay Area Governments (AMBAG) in their letter dated October 10, 1991, and comments from Santa Cruz County dated September 17, 1991. The City of Monterey includes those comments by reference in this correspondence and requests that they be addressed in the Final EIS.

The City of Monterey has continually opposed off-shore oil drilling off the Central and Northern California coasts and has provided extensive input through the entire review process. We stand ready to continue our active involvement in the environmental review process for the Outer Continental Shelf program and request that these comments be addressed in the Final Outer Continental Shelf Environmental Impact Statement.

Sincerely,

Bill Wojtkowski

Bill Wojtkowski
Community Development Director

BW/CH:rm

c: AMBAG

City of Morro Bay
595 Harbor St. • Morro Bay, CA 93442-1900 • 805-772-1214

September 23, 1991

Director,
Minerals Management Service (MS-4013)
1849 C Street, NW.
Washington, D.C. 20240

RE: Comments on the Comprehensive OCS Five (5) Year Program

Dear Director:

It is with deep frustration that the City of Morro Bay again writes to you opposing proposed leasing of OCS lands in the area near Morro Bay. The City has been on record in opposition to these Potential leases every time the Interior Department has proposed them. Our latest response dated April 23, 1991 provided ample justification for our objections. Yet, your agency has wholly ignored our concerns and has not even acknowledged them in the current program proposal. All of our objections as expressed in the April 23rd letter, and in numerous previous communications remain the same. The City of Morro Bay is unalterably opposed to what our citizens believe is an environmentally reckless course of action by your agency.

The Draft EIS for the proposed five (5) year OCS Management Program is fundamentally inadequate and should be extensively revised and then recirculated for public review and comment. Areas of the Draft EIS requiring substantive additional work are: 1) fisheries impacts; 2) navigational hazards; 3) geologic hazards associated with drilling, where shore based support facilities for drilling and production work would be located, and what such facilities would likely be; and 4) air quality impacts and potential mitigations. In addition, the Draft EIS lacks credible information to demonstrate petroleum extracted from the OCS is of a quality suitable for and, in fact, will be used as an energy resource and not as a raw material in the chemical and plastics industries.

The Draft EIS lists five alternatives to the proposed lease sale. Alternative IV suggests holding 15 sales in 8 outer Continental Shelf planning areas including 6 offshore Alaska and 9 in the central and western Gulf of Mexico; this alternative is the only option which does not consider leasing in the southern California area. As such it is the only alternative that is remotely acceptable to the citizens of Morro Bay. However, we oppose any further OCS leasing anywhere until such time as the nation has adopted a realistic energy policy that stresses conservation, environmental protection and is based on the concept of renewable energy resources.

CITY HALL
595 Harbor Street

FIRE DEPARTMENT
715 Harbor Street

PUBLIC WORKS
695 Harbor Street

HARBOR DEPARTMENT
1275 Embarcadero

POLICE DEPARTMENT
850 Morro Bay Blvd.

RECREATION AND PARKS
1001 Kennedy Way

Again, the Draft EIS requires major revisions to incorporate and address our concerns, and must be recirculated before certification. Citizens of our coastal city remain unalterably opposed to any leasing in the Santa Maria Basin and Santa Barbara Channel.

Sincerely,

Rose Marie Sheetz, Mayor
City of Morro Bay

cc: James Strock, Secretary for Environmental Protection, 555 Capitol Mall, Suite 235, Sacramento CA 95814
ATTN: DOI 92-97 comments

CITY OF SAN BUENAVENTURA

CITY COUNCIL

Richard L. Francis, Mayor
Donald A. Villeneuve, Deputy Mayor
Catherine F. Bean
Todd J. Collart
John A. McWherter
James L. Monahan
Gary R. Tuttle

October 16, 1991

Environmental Projects Coordination Branch
(Mail Stop 4320)
Minerals Management Service
381 Elden Street
Herndon, VA 22070

RE: COMMENTS ON THE OCS 5-YEAR PLAN

On October 3, 1991 the City of San Buenaventura Environmental Impact Report Committee authorized the following response to the Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program (1992-1997) Draft Environmental Impact Statement. The Committee noted its disappointment that their comments of April 15, 1991 to Mr. Barry Williamson of the Minerals Management Service were not addressed in the Draft Environmental Impact Statement (EIS).

ONSHORE PLANNING EFFORTS

As noted in the City's April 15, 1991 letter "there is the public policy issue of local government having to accommodate ancillary onshore facilities, and having to absorb the environmental impacts and socioeconomic effects. The Federal Government makes most OCS decisions unilaterally, leaving local government in an awkward position of having to re-balance its needs and interests."

Creation of a Tri-County Coordinating Committee and a Local Government OCS Advisory Committee by the California Secretary for Environmental Protection provide forums for strategic planning and coordination. Programs such as the ongoing Socioeconomic Monitoring and Mitigation Program, which is a condition of the Point Arguello and Gaviota permits, also help to temper such impacts. These measures do not, however, meet the continuing need for a partnership between Federal, State and local governments to plan for the appropriate and timely development of our coastal energy resources, to address the impacts of this development, and to equitably share in the benefits.

ENERGY POLICIES

Development of the OCS 5-Year Plan rekindles a number of public policy debates which have involved States and local governments over the past two decades. Foremost among those issues is the lack of an approved national energy policy or a set of adopted strategies for exacting a balance between our needs for mineral resource production and our desires for resource protection.

501 Poli Street • P.O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

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The City of San Buenaventura joins with other local agencies across California in calling for meaningful consideration of energy efficiency and the use of renewable energy resources by the Federal government. We join with the Governor in requesting that these options be made a component of the proposed National Energy Strategy. It remains very difficult for States and local governments to actively support offshore development absent a context within which to measure the relative necessity and strategic importance of such development. Our nation is in need of an energy policy that can withstand the test of public debate, deliberations and time, and which stresses the importance of conservation and alternative fuels in combination with leasing and development.

CALL FOR CONTINUING STUDY AND COMMITMENTS TO SAFEGUARDS

The President, in his June 26, 1990 OCS statement, declared a ten-year moratorium on further California lease sales, with the exception of the 87 tracts identified within the Lease Sale 95 area. The Presidential declaration also delayed leasing of these tracts until after the performance of studies in response to the report of the National Academy of Sciences (1996). Conversely, the Governor's letter to the Secretary of the Interior of August 8, 1991 stresses that "Foremost among my requests was the deletion of the proposed 87-tract lease sale off Southern California, and the delay of the production on the existing leases, until basic environmental studies are completed and until Interior commits to certain basic environmental safeguards that have long been identified as essential by the State of California and our coastal local governments." The City of San Buenaventura joins in the call for continuing study and commitment to safeguards.

ENVIRONMENTAL MEASURES

The City's letter of April 15, 1991 noted several environmental control measures against which the Environmental Impact Statement should measure impacts, costs and alternatives to the OCS 5-Year Plan. The following list summarizes those environmental control measures that need to be reflected in the EIS.

- Pipeline transport is preferrable to marine tankering. Tankering should be limited to the outer Santa Barbara Channel waters, as supported by the U.S. Coast Guard. Tankering should be limited to defined interim conditions in the absence of an adequate pipeline system.

- Pending EPA control measures should meet or exceed onshore new source requirements and strategies. Electric platforms should be encouraged where feasible, as Unocal has done with Platforms Gina and Gilda.

- Cumulative socioeconomic impacts should be fully mitigated in accordance with the provisions of the ongoing Ventura County Socioeconomic Monitoring and Mitigation Program (SEMP).

- The EIS should evaluate the effectiveness of spill response centers based at Santa Barbara Harbor, Morro Bay, Avila Bay, the Carpinteria Yard, Ventura Harbor and the Port of Hueneme.

Since the OCS 5-Year Plan has the potential to significantly affect State coastal water, as well as present potential onshore impacts, the EIS prepared pursuant to the National Environmental Policy Act should also be cognizant of and meet parallel State Environmental Impact Report requirements under the California Environmental Quality Act.

It is our understanding that should a specific sale and/or lease program be proposed and submitted for consideration, a subsequent EIS will be completed that will address the effects of the activities on specific geographic regions and communities.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE AND MITIGATION MEASURES

The EIS does not identify an environmentally superior alternative or specifically outline the mitigation measures that would be required by the program. The EIS assumes the implementation of all mitigation measures required by statute or regulation. In addition, the impact analysis assumes that sale-specific stipulations which were commonly adopted in past lease sales are in effect. The text also highlights a small number of mitigation measures for each region, but the measures do not contain specific monitoring and reporting programs. Once again, the City of San Buenaventura joins with other local agencies across California in calling for an EIS that identifies the environmentally superior alternative, and adequately addresses mitigation measures, and monitoring and reporting programs.

We appreciate the opportunity to comment on the Draft Environmental Impact Statement for the OCS 5-Year Plan and for your consideration of the City's comments. I would encourage you to contact me at (805) 654-7848 to further discuss these issues and concerns.

Sincerely,

Steve Chase

Steve Chase, Chair
EIR Committee

cc: City Council
John Baker, City Manager
Thomas Berg, Ventura County Resource Management Agency -
Regional OCS Coordinator

wedt: ocs4.txt

CITY OF SANTA BARBARA

City Administrator

POST OFFICE BOX 1990
SANTA BARBARA, CA 93102-1990
~~P.O. DRAWER P-P~~
TELEPHONE (805) 564-5305
(805) 963-0611

CALIFORNIA

October 28, 1991

Debra Purvis
Environmental Projects Coordination Branch (Mail Stop 4320)
Minerals Management Service
381 Elden Street
Herndon, VA 22070

RE: COMMENTS ON PROPOSED COMPREHENSIVE OUTER CONTINENTAL SHELF (OCS) NATURAL GAS AND OIL RESOURCE MANAGEMENT PROGRAM, 1992-1997, DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

Dear Ms. Purvis:

Enclosed are two attachments with comments from the City of Santa Barbara on the subject document. The first is the statement of Mayor Sheila Lodge at the MMS hearing in Santa Maria on September 18, 1991, revised as presented at the hearing.

The second attachment provides detailed comments on the DEIS document.

We appreciate the opportunity to comment on the DEIS for the Proposed Comprehensive OCS Program. Please contact me at (805) 564-5304 if you have any questions on this material.

Sincerely,

Dale T. Brown

Dale T. Brown
Regional Issues Analyst

DTB/mr

Enclosure Revised testimony of Mayor Sheila Lodge
Detailed Comments on DEIS

CITY OF SANTA BARBARA

DETAILED COMMENTS ON

DRAFT ENVIRONMENTAL IMPACT STATEMENT 1992-1997 OUTER CONTINENTAL SHELF NATURAL GAS AND OIL RESOURCE MANAGEMENT PROPOSED COMPREHENSIVE PROGRAM

Page	Comment
I-13	It is stated that the analysis assumes that the environmental protection provided by lease stipulations will be applied to leases issued under the Comprehensive Program. Unless these stipulations are specifically included as part of the Proposed Program, they should not be assumed in the environmental analysis.
II-13	Alternative II, the No Action case, fails to include the mix of energy alternatives which could result from government action to encourage energy conservation and development of renewable energy supplies. As described, Alternative II relies on only those energy substitutes for OCS resources which would result from market forces. This assumption results in little increase in conservation or use of renewable supplies. Appendix C describes background analyses done of various alternative energy scenarios. It appears that only the "market forces" scenario was carried forward into the DEIS. The environmental benefits of government action to encourage conservation and use of renewable supplies should be fully analyzed in the FEIS and that information made available to the public and decision-makers.
III-151	The discussion of Public Services in Southern California discusses constraints on water supplies. The discussion should include data on current water use in selected communities likely to be impacted by the increased water demand caused by OCS exploration and development activities. The significance of the later information in Chapter IV on projected water demand from the Proposed Program cannot be judged without information on existing levels of water production and use. The discussion of water supplies should recognize the ongoing implementation of desalination as a water supply source for Southern California communities. The City of Santa Barbara is currently constructing a reverse osmosis desalination facility which will rely on seawater obtained through an intake 2,500 feet offshore. The facility will be on-line in March of 1992. The desalination facility would be inoperable if the area of the intake were affected by an oil spill. The facility is designed to be a drought reserve for the City and would provide a significant portion of the water for the

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	City and neighboring water districts if the current drought continues or when prolonged droughts recur in the future. Additional information on the City's desalination facility is available from the City of Santa Barbara Public Works Department.
IV.D-1	See comment for page I-13.
IV.D-11	The statement about the assumptions for transportation of hydrocarbons in the Southern California Planning Region is very unclear. The ability of "existing facilities" to handle the additional production should be documented. Does the reference to onshore facilities include marine terminals as well as onshore pipelines? In the absence of requirements in this Proposed Program for the use of onshore pipelines for transport of crude oil to market destinations, the environmental analysis should explicitly state that use of tankers is assumed and detail the resulting risk of oil spills.
IV.D-45&46	Statements that there is "likely" to be a requirement for NOx and RHC emissions from OCS activities off Southern California to be totally offset are insufficient to justify the conclusion that there will be no net increase in emissions in the area. At this time there is no regulatory requirement that they be offset, and this Proposed Program does not include such a requirement. The conclusion should recognize that impacts to onshore air quality would occur under existing regulations. This comment is applicable to the sections describing air quality impacts for the High and Cumulative cases as well.
IV.D-233&234	It is stated that it is assumed that no new onshore facilities would be needed to support new offshore oil and gas activities, given capacity in existing facilities. There is no analysis provided to justify this assumption, either in this section or in the initial description of Alternative I in Chapter II or in Sections IV.A or IV.D.1.a. There are 89 undeveloped but already leased tracts in the Santa Barbara Channel/Santa Maria Basin region. The timing and level of development of these tracts will affect the availability of capacity in existing facilities. Specific information should be provided as to assumed capacities of facilities and projected production and throughput for the base case scenario. This comment also applies to the parallel discussion for the High Case.
IV.D-234	The section on Vessel Traffic and Ports should state explicitly that the Proposed Program includes consideration of leasing of tracts which overlie existing

vessel lanes in the Santa Barbara Channel, as shown on Visual III. This section should discuss the potential hazards and impacts resulting from these overlapping and conflicting uses. The volume of vessel traffic in the lanes should be reported, as well as the history of accidents, including the sinking of the Pac Baroness. The current status of the vessel lanes and the Coast Guard's pending rulemaking should be clearly explained.

The statement that the Coast Guard and the California Coastal Commission have never allowed development activities to infringe on the vessel lanes is inadequate to justify the conclusion that the proposal is not expected to increase the obstacles in or adjacent to the shipping lanes. There currently is no regulation prohibiting such an occurrence and none is proposed in this Program.

IV.D-236 The discussion of Public Services should include a discussion of the potential impacts to the City of Santa Barbara's desalination facility in the event of an oil spill.

IV.D-448&449 See comment for page IV.D-233

It is not clear from the text or the tables whether the information given in Tables IV.D.1.c-2 and IV.d.1.c-3 represents new facilities in the cumulative case or total (existing plus new) facilities in the cumulative case. Both sets of information should be provided. There should be a description of the assumptions made regarding development on already leased but undeveloped tracts. In the Tables, there is a discrepancy in the numbers of platforms projected for Southern California.

BOARD OF SUPERVISORS
COUNTY GOVERNMENT CENTER • SAN LUIS OBISPO, CALIFORNIA 93408 • 805-549-5450

Members of the Board
HARRY OVITT
LAURENCE L. LAURENT
EVELYN DELANY
RUTH E. BRACKETT
DAVID BLAKELY

September 17, 1991

Minerals Management Service, DOI
Attn: Branch of Environmental Projects Coordination
381 Elden Street
Herndon, VA 22070-4817

Subject: **Comments and Resolution on the Draft Environmental Impact Statement for the Proposed 5-Year Natural Gas and Oil Comprehensive Program.**

Dear Project Coordinator:

On September 17, 1991, the San Luis Obispo County Board of Supervisor reviewed and approved the attached resolution pertaining the draft environmental impact statement (DEIS) for the 1992-1997 proposed program. Also attached is a copy of the comments on the proposed program we sent directly to Director Sewell and our preliminary analysis on the DEIS.

All correspondence related to these comments should be addressed to, John Euphrat, Principal Planner; San Luis Obispo County Planning and Building Department; Energy and Natural Resources Divison; 1129 Pacific Street; San Luis Obispo, CA 93401.

Should you have any questions regarding the attached comments, contact John Euphrat of the Department of Planning and Building at (805)549-5600.

Sincerely,

David Blakely, Chair
San Luis Obispo County Board of Supervisors

Attachments

II. Detailed Comments

Introduction

The following comments are a section-by-section review of chapters three and four of the DEIS. The comments address the subjects addressed in the analysis of the Pacific Region with an emphasis on the Santa Maria Basin and the San Luis Obispo County coastline. The county submits these comments to Governor Pete Wilson and the Minerals Management Service in accordance with the amended Outer Continental Shelf Lands Act of 1978.

Chapter III Affected Environment (Pacific Region)

1. Physical Environment

a. Geology

(1) Geology and Hydrocarbon Potential

This section discusses in very general terms the location of major geologic structures. It does not provide an analysis of the hydrocarbon potential of the areas, as the title would suggest.

There is a great deal more geologic information available regarding the Santa Maria Basin than has been presented. This "thumbnail" description of the geology is not very useful without maps and provides a very minimal description of the geology. Information that has been gathered as the result of past research should have been included. The Santa Maria Basin is a very geologically complex area. A more detailed description of the area is needed and is available. Current data gathered from previous lease sales should be incorporated. Also, a section that discusses the hydrocarbon potential should be added.

In two letters from the U.S. Geologic Survey, research needs regarding the Santa Maria Basin are recommended. These research needs are defined as follows:

1. A geologic framework which identifies the geological structure of the coast region.

2. Sand transport paths, both cross-shore and longshore, are important to understanding the geological processes in the coastal zone.

3. Once the geologic framework and transport paths are known, human impact can be evaluated.

(2) Geologic Hazards

Geologic hazards are an increased risk to offshore oil exploration production and subsea pipeline placement and operations. Major hazards that exist in the lease sale area, many of which are concentrated in the western edges of the nearshore tracts and in the litigation area, include: the Hosgri fault zone (3-12 miles wide), areas of potential mass movement of consolidated and unconsolidated materials (landsliding), and areas of gas charged sediments and pressurized shallow gas zones. Consequently, these hazards should be included, among other factors, when considering deferral of leasing in order to obtain the regional balance between oil production and "maximum feasible protection" to other coastal resources and sensitive environments.

Seismicity: The document states that because the Santa Maria Basin largely lies within the gap between two seismic networks many small magnitude events (<4,0) probably were not detected, and the locations of those recorded may be unreliable.

This indicates a serious and possibly hazardous lack of seismic data. Before any decision regarding further offshore oil activities occurs, the area needs to be thoroughly studied with regard to its seismic characteristics.

The DEIS presents seismic information regarding the Santa Maria Basin that is general, and lacks specific data that is critical to understanding the potential seismic hazards. The research completed with regard to Diablo Canyon Nuclear Power Plant represents a significant body of information that could be used in analyzing the seismicity of the area. The county requests that specific data related to the seismicity of the Santa Maria Basin be included in the EIS.

Mass Transport, Ground Failure, Steep Slopes: This section describes in one sentence these characteristics. The lack of information would lead someone to believe that the above geologic hazards are of little consequence. The fact is, many of these hazards exist in the Santa Maria Basin and need to be studied further.

Hydrocarbon Seeps: This topic is not discussed with regard to the Santa Maria

Basin. A data search should be completed and information regarding seeps in the Santa Maria Basin be compiled. If information does not exist, studies should be completed to understand this phenomenon in the Santa Maria Basin. The EIR for the San Miguel project identifies several gas seeps and the potential that other seeps exist is great.

Shallow Gas and Overpressurizing: The Santa Maria Basin has significant potential for shallow gas. This is well documented in the EIR prepared for the San Miguel project and in a Geology Report prepared by the USGS in regards to Lease Sale 73. This is an example of available information being omitted from the EIS.

Faulting: This discussion does not give adequate information related to faulting in the Santa Maria Basin. One paragraph describes in very general terms the faults in the basin. There is significant data related to the basin. The Safety Evaluation Report related to the operation of Diablo Canyon Nuclear Power Plant provides some very specific information about the faults and seismicity of the area. Some of this information was prepared by the USGS. Also, the San Miguel project EIR provides significant information related to faulting and seismicity. We request that data from these reports be incorporated into this section.

b. Physical Oceanography

A discussion of oceanographic processes that occur in the Santa Maria Basin is non-existent. While a good deal of general information is presented in regard to Washington, Oregon and the Southern California bight, the Santa Maria Basin is completely neglected. We would point out that a comprehensive study of the oceanographic process in the Basin has not yet been completed. It would appear from the DEIS that other areas have been studied much more thoroughly than the Santa Maria Basin. This confirms the county position that more scientific information about the Basin is required.

One example of the lack of data is that a discussion of the persistent upwelling that has been identified off Point Sal down to Point Conception is not mentioned. This upwelling is a significant oceanographic and biological occurrence that has not been extensively studied. Two other seasonal upwellings are known to exist in the Basin and are associated with Point Piedras Blancas and Point Buchon.

NASA's Biogeochemical Cycling in Ocean study points to the importance of

upwellings and that further study is needed to fully understand the process. It states:

> "In the upwelling process, cold nutrient-rich water is drawn from the depths and exposed to sunlight in the euphotic zone. Phytoplankton seed germinates there and grows by uptake of upwelled nutrients (derived in part from bacterial decomposition of organic matter on the shallow continental shelf), and it in turn is grazed upon by zooplankton in a complicated interrelated process."

The DEIS should, at the very least, acknowledge that these important upwellings exist and evaluate potential impacts as applicable. We would submit that the upwellings exist. We would submit that the upwellings should be studied thoroughly before any leasing of tracts is completed.

c. Water Quality

(1) Marine

The Santa Maria Basin is not discussed in this section of the document. Again, the Washington, Oregon, and the Southern California bight are discussed in general terms. The Santa Maria Basin is alluded to in one sentence:

> "The most pristine waters occur on the outer banks and basins, the windward sides of the Channel Islands, **and the area north of Pt. Conception."**

The statement "the area north of Pt. Conception" - minimizes the existence of the Santa Maria Basin. Apparently, data related to the marine water quality of the Basin either does not exist or was not found. This section of the DEIS is wholly incomplete and does not describe in any substantive terms the affected environment. The county requests that more information describing the water quality be included.

(2) Estuarine

The Morro Bay estuary has been nominated by Governor Pete Wilson as a candidate for EPA's National Estuary Program, yet is not mentioned or described at all in this section. Morro Bay is currently on NOAA's site evaluation list for the National Marine Sanctuary Program. The State Water Resources Control Board offered the following description of the estuary:

> "Morro Bay is the only major estuary in California south of San Francisco that has not been significantly altered by human activities. A large number of federally-listed endangered and threatened plant and animal species reside or occur in the watershed or rely on the estuary for a significant part of their life cycles. The estuary serves a critical environmental function for a number of migratory bird species of the Pacific Flyway. International treaties protect these species and their habitat. The estuary serves as an important breeding and nursery area for a number of species important to the commercial and recreational fisheries industry."

Research and restoration projects are planned for the estuary. The Morro Bay Estuary and watershed obviously represents a sensitive, complex and very important ecosystem that contributes greatly to the nations ecological resources. The DEIS completely neglects this area in the discussion of affected estuarine environments. The county requests that more scientific information related to this area be included.

Another area not discussed are the wetlands at the mouth of the Santa Maria River. This area has been recognized nationally and also needs to be addressed in the EIS.

d. Meteorology

(1) Climate

This portion of the DEIS provides a very general and broad description of the climate in the Pacific Region. A specific description of the climate in the Santa Maria Basin should be provided.

(2) Air Quality

The County Air Pollution Control District has provided comments on the attached memorandum to address this issue.

2. Biological Environment

a. Marine Environment

The document references section III.B.2a (1) and (2). While this may save time and space in the DEIS, this type of referencing causes the description of

the affected environment to be inadequate and minimizes the biological richness of the Pacific Region. We request that the Pacific Region analysis include information about the cetaceans that inhabit or traverse the Santa Maria Basin.

The introduction discusses the Channel Islands and "other important pinniped areas," including: "Ano Nuevo Island and the Farralon Islands off central California, Cape Mendocino and Pt. St. George off northern California, Cape Arago off southern Oregon, and the Columbia River and Willapa Bay and Grays Harbor along the Washington coast." The important pinniped areas in the Santa Maria Basin and along the San Luis Obispo County coastline are not discussed.

Extensive concentrations of pinnipeds exist along the San Luis Obispo County Coast. The rocks onshore and offshore Pt. Sal, Shell Beach and Pirates Cove, the Morro Bay Tidal Flats, Lion, Pecho, and Sea Lion Rocks provide haul out areas for a variety of pinnipeds. The DEIS fails to discuss the San Luis Obispo County coastline and the Santa Maria Basin with regard to the pinniped populations, thus minimizing the importance of the marine mammals that are in the area. The county requests that information regarding the locations, species of pinnipeds, and seasonal behaviors be added to this discussion.

(1) Threatened and Endangered Species

(a) Cetaceans

It should be clarified in the EIS that many endangered or threatened cetaceans inhabit or traverse the Santa Maria Basin. This fact is not clearly stated on page III-116. Also, the descriptions of the pinniped and cetacean fauna of the Pacific OCS Region are at best, limited and minimal. With so many species of cetaceans that inhabit and traverse the Pacific region, to call a discussion of one of the endangered cetaceans (the gray whale) "representative" is to misrepresent the environmental importance of the area. This is also true in the discussion of nonendangered species where the killer whale and harbor porpoise are the only two species represented in the discussion.

Gray Whale: This is a general discussion of the gray whale's activities. The DEIS does not consider the behavior patterns of the gray whale in relationship to the Santa Maria Basin and the San Luis Obispo County coastline. Not only do gray whales, (and other whales), migrate along the San Luis Obispo County coastline and through the Santa Maria Basin, but some unique behavior has been observed. At the Santa Lucia Bank, as many as 7 species have been recorded feeding together in one day. Simultaneous feeding bouts among humpback, bairds fin, blue, and sperm whales and smaller species have been reported. Also, a phenomenon known as "stacking" occurs in the Santa Maria Basin. Whales wait for "lead" whales before they continue their migration. This activity is not well understood and should be studied further. The county requests that information related to the gray whales migration and behavior patterns in the Santa Maria Basin be included in the EIS.

(b) Guadalupe Fur Seal

This discussion reveals some of the data gaps that exist with regards to the Guadalupe fur seal. The DEIS states that the distribution of the fur seal is unknown and that the population is small (2,000 animals) but apparently growing. The growth rate needs to be researched further. The document also states that little is known about the diet of the Guadalupe fur seal. This data should gathered and included in the EIS. It also should be noted that the Guadalupe fur seal is extremely vulnerable to contamination from oil because clean, air filled fur is their primary protection against cold ocean waters. The county requests that relevant data gaps regarding the Guadalupe fur seal be filled in the EIS in order that potential impacts can be reasonably assessed.

(c) Sea Otter (Pacific Population)

The U.S. Fish and Wildlife's Draft Revised Southern Sea Otter Recovery Plan states that the sea otters that were translocated to San Nicolas Island are "precariously small and it future prospects are uncertain." To use the translocation program population as part of the discussion of the southern sea otter is premature. The program has been controversial from the outset; the number of otters surviving the translocation process is unknown and the ultimate results of this program are not clear. It should also be noted that the U.S. Fish and Wildlife has drafted a plan that would terminate the translocation of sea otters to the San Nicolas Island. Based on these facts, the county requests that all references to the population at San Nicolas Island Translocation program either be deleted from the DEIS or at least not referred to as a method of protecting the species.

While this portion of the DEIS does speak to, (in general terms), the sea otter's history and range, it fails to discuss in detail the otters feeding, mating, and reproductive behaviors and patterns within the Santa Maria Basin and off the San Luis Obispo County coastline. The spring 1991 count completed by

Ronald Jameson of the U.S. Fish and Wildlife Service indicated that 1,941 otters inhabit the area from Pt. Ano Nuevo to Gaviota. The Santa Maria Basin, (from Pt. Sur to Pt. Conception), contains 1,347 otters which represents 70% of the total California population. 924 sea otters were counted from Redwood Creek to Oso Flaco Lake, (San Luis Obispo County coastline). This represents 48% of the sea otter population in California. The county requests that information that is representative of the environmental sensitivity of the Santa Maria Basin be included in the DEIS. The omission of relevant information regarding the sea otter is one example of the Department of the Interior's failure to evaluate balancing national energy needs with the environmental sensitivity of the habitat of a threatened species. In the Memorandum of Agreement regarding Lease Sale 73, the MMS and the State of California agreed to protect the sea otter and other biological resources by deleting 21 tracts in the Santa Maria Basin, thus providing a coastal buffer for this important and environmentally sensitive habitat. The county would hold that this area is no less sensitive than it was in 1983, and is in fact more valuable because of the shrinking habitats available to the sea otter and other marine mammals. The county requests the deletion of the following tracts to protect the habitat of the sea otter and other biological resources: 590, 591, 632, 633, 634, 635, 676, 678, 679, 680, 723, 724, 768, 813, 814, 857, 858, 897, 899, 900, 901, 902, 903, 904, 941, 943, 944, 945, 948, 984, 985, 986, 15, 17, 18, 61, 62, 63, and 105.

The DEIS focuses on the population growth of sea otters, which tends to minimize the delicate nature of their existence. A large oil spill could destroy the entire sea otter population now residing along the San Luis Obispo County coastline. The cost of re-establishing the sea otter population in the aftermath of an oil spill should also be included in a comprehensive economic analysis. The county also requests that additional data regarding their behavior and occurrence in the areas off San Luis Obispo County and/or in the Santa Maria Basin be included in the EIS.

(2) Nonendangered Species

(a) Cetaceans

2) Harbor Porpoise

The harbor porpoise is identified as having a range down to Pt. Conception. However, the number, distribution, and migration patterns are not included. The DEIS states that the Harbor Porpoise is "fairly common". This is a very subjective way of identifying population distribution. The county requests that more specific information related to the porpoise's population distribution be included in the EIS.

This discussion does not include many important cetaceans that migrate inhabit or traverse the Santa Maria Basin. The following is a partial list of some of the cetaceans:

1) Pacific white-sided dolphin;
2) northern right whale dolphin;
3) common dolphin;
4) Risso's dolphin (Grampus); and
5) Dall's porpoise;

The above is an example of how the DEIS fails to accurately describe the marine environment. Significant changes and additions to the DEIS are needed to make the document a useful tool to be used by decision makers at any stage of the leasing process.

(b) Pinnipeds

Only two pinnipeds are represented in this discussion. While other are discussed in section III.B.2a(2), the pinniped population in the Santa Maria Basin is not portrayed in accurate terms. The county requests that substantially more information regarding the pinniped population and their activities in the Basin be provided.

b. Marine and Coastal Birds

(1) Threatened and Endangered Species

The American peregrin falcon is listed as an endangered species but was not included in this discussion of marine and coastal birds. The peregrin falcon typically nest on protective ledges of high cliffs and forage over marshes, sloughs, estuaries and seacoasts. Coastal and marsh and estuarine habitat (such as Morro Bay) are important foraging areas for the peregrin falcon. The nomination package from California's Office of Environmental Protection and State Water Resources Control Board stated the following:

> "The pair of peregrin falcons at Morro Rock requires monitoring and manipulation to produce young. Morro Rock Ecological Reserve, which provides nesting sanctuary, is the most famous natural nesting site for peregrin falcons on the Pacific coast. The coastal strand and wetlands in and around the bay offer prime foraging habitat for wintering falcons and for the resident pair."

The exclusion of this very delicate and endangered species in the DEIS further documents the incompleteness of the DEIS. The county requests that the peregrin falcon be included in this discussion.

There are many other species that should be considered in the DEIS discussion of marine and coastal birds in the Pacific Region and specifically the Santa Maria Basin area. A partial list includes:

1) The snowy plover;
2) ferruginous hawk; and the
3) least bell's vireo

(a) California brown pelican

This section completely misrepresents the San Luis Obispo County coastline in regards to brown pelican population and activities. From the information in the DEIS, one might conclude that the population in the Santa Maria Basin is of very little consequence. However, aerial surveys completed by the state's Department of Fish and Game completed in 1986 indicate that the San Luis Obispo coastline is the primary area of roosting and other activities for the brown pelican population. To overlook such an obviously important habitat to the brown pelican, is to once again minimize the environmental sensitivity of the San Luis Obispo coastline. The county requests that the information from the Fish and Game aerial surveys be included in the EIS.

(b) California least tern

The DEIS states that breeding colonies are limited to 25, most of which are in southern California. A breeding colony exists in the Nipomo Dunes complex, just south of Oso Flaco Lake. The colony is referred to in literature as the Guadalupe Dunes colony even though it is actually located in the Mussel Rock Dunes. The DEIS also, indicates that "greatly increased human activity" has resulted in decreased nesting habitat. This would indicate that the existing breeding colonies are even more valuable. The county requests that information that more accurately describes the precarious situation of the least tern be included in the DEIS.

(c) Light-footed clapper rail

The California Clapper Rail is not discussed in the DEIS. The California clapper is protected by the federal and state as an endangered species. The California clapper rail is known to range as far south as Morro Bay. This another example of the DEIS not portraying the full picture. The county requests that a discussion regarding the California clapper rail be included in the EIS.

c. Fish Resources

The DEIS refers to the fish resources of southern California as "complex, dynamic, and extremely rich". Several upwellings have been documented in the Santa Maria Basin. The upwelling at Pt. Arguello is persistent and is unique in this respect. Other more seasonal upwellings have been identified in the Basin. The county requests that these upwellings be identified and located in the DEIS.

To describe only three of the hundreds of fish species inhabiting the southern California planning area is not representative of this "complex, dynamic, and extremely rich" area. The county requests that many more of the economically and biologically important species be discussed. Some examples might include:

1) halibut;
2) sharks (variety of species);
3) sole;
4) surfperch
5) turbot; and
6) white croaker;
7) rockfish.

d. Coastal Habitats

Wetlands and Estuaries: On May 28, 1991, Governor Pete Wilson nominated Morro Bay for inclusion into the EPA's National Estuary Program. The DEIS does not reference Morro Bay at all in its discussion of wetlands and estuaries. In fact, it minimizes California wetlands and estuaries by comparing total acreage with that of Washington and Oregon. California has sustained much more development of its estuaries and wetlands, and at one point in time probably had acreage that rivalled Washington and Oregon. Also, because California now has fewer acres of wetlands and estuaries, it becomes a higher priority to protect the still existing wetlands and estuaries. Morro Bay is a pristine and nationally significant estuary that contains many threatened and endangered species. It is likely that it will be included in the National Estuary Program.

Another area that has gained national recognition is the Nipomo Dunes complex. This ecological preserve is under the management of the Nature Conservancy and contains a very unique dune-wetland area. The Management Plan for the Nipomo Dunes Preserve, prepared by the Nature Conservancy, stated the following:

> "The Nipomo Dunes exhibit the highest degree of endemic flora and fauna, as well as the most diverse mixtures of plants and wildlife of any coastal dune system in California. These characteristics have developed probably because of the areas extensive size; its relative remoteness; its unusual mix of dune, scrub, grassland, and wetland plant communities; and the dunes location in a latitudinal range where northern and southern flora and fauna intermingle. The Nipomo Dunes are considered the largest and most beautiful coastal dune-lagoon complex in California. In 1980 the U.S. Fish and Wildlife Service described the Nipomo Dunes region "the most unique and fragile ecosystem in the State of California," and ranked it first on a list of 49 habitat areas needing protection in the state."

This area and the Morro Bay estuary should also be adequately described in the EIS.

e. Seafloor Habitats

(1) Intertidal Benthos

Since the area north of Pt. Conception is considered to be in the Oregonian biogeographical province and the area south of Pt. Conception is in the Californian biogeographical province, it is obvious that the Santa Maria Basin and San Luis Obispo County are in the Oregonian biogeographical province. However, when the DEIS refers to Southern California on page III-140, it is not clear if the Southern California bight is being discussed or the Southern California planning area. This should be clarified.

3. Socioeconomic Environment

a. Coastal Environment

(1) Demography and Employment

It should be clarified what areas are included when the DEIS refers to "southern California" on page III-149. The second sentence states: "Urban development along the coast is primarily concentrated in the San Francisco Bay area and southern California." San Luis Obispo County should not be considered part of southern California when "urban development" is referenced. The county has a rural character, and while urbanization has occurred at an increased rate in the last several years, the county is by no means comparable to southern California with regards to urban development. This reference should be clarified.

This section does not discuss the demographic and employment characteristics of San Luis Obispo County. The section completely ignores the county with regard to a detailed discussion of any component related to demography and employment. This complete lack of information points out the inadequate and unavailable data related to the socioeconomic profile of San Luis Obispo County. A thorough and comprehensive study of the current demographic and employment circumstances should be completed.

The county strongly recommends that MMS consider the following in developing the socioeconomic studies:

1) Any socioeconomic impact assessment should be developed using community based methodology. This means that the assessment team should explore the concerns of San Luis Obispo County residents with regard to OCS development.

2) These concerns should be blended into an assessment methodology that explores other, more typically examined cultural, economic, political, psychological and sociological effects of OCS development.

To date, the MMS has failed to complete the type of community based research recommended above. The county continues to request a thorough and comprehensive study of the socioeconomic circumstances within the county. The following specific issues should be addressed in a socioeconomic impact assessment:

A) The analysis should discuss how OCS development would impact our long-term understanding of past native societies and the unique character of the current San Luis Obispo culture. If OCS development disrupted the archaeological record of these sites, this historical record would be lost forever.

B) The current unique culture of the county is evident by the recent growth. This points to the county's desirability and uniqueness as a place to reside. There is an unusual blend of fishing, farming, and small town life along with the more urban, and growing college community. The social impact assessment should estimate the impact of OCS development on this culture.

C) The economic effects of OCS development should be analyzed. How would OCS development impact the demand for goods and services, especially housing and how does this impact the elderly, minorities, single parents, etc.? What would be the economic impacts on fishermen?

D) Politically a socioeconomic impact assessment should examine the shift in control of local community organizations. How would local government and other community organizations be affected? Would local government need additional staff to handle the services required to regulate the construction of new onshore support facilities? Would increased services such as law enforcement, fire protection and mental health services be required?

E) The assessment should estimate the change in demographic patterns that may occur in the county if OCS development occurs. This is often called a demographic change assessment. It should be examined if new subgroups will be created or existing subgroups expanded. If the assessment predicts changing demographic patterns for the county, do the patterns lend themselves to increased violence, prejudice, or discriminations? How would neighborhood cohesion/conflict be impacted? How would income levels change, and more importantly, how would the level of inequality change? When compared to wealthier people, would the poor and near poor be even poorer than they are now?

F) The assessment should examine the impact of OCS development as it relates to personal stress. Does the changing character of the population sub-groups, the economic conditions, the political turmoil have the potential for higher levels of stress for both older residents and newcomers? The assessment should examine the potential changes in people's feelings, alienation, and level of satisfaction with their quality of life.

A social impact assessment of this level of detail is needed for San Luis Obispo County. A social/economic model of the county must be developed. This entails the collection of baseline data over time and the development and validations of a social/economic model.

While there are at least a dozen such models already created, each seems applicable to its own geographic area, and none seem to estimate the potential for local problems. Thus, a model must be developed specifically for San Luis Obispo County.

(2) Land Use

This section is general and discusses in broad terms a few land use issues that relate to only a small part of the state of California. The discussion provides very little information with regard to the specific land use policies and recent decision of the state and gives no mention of the polices of San Luis Obispo County. The DEIS is severely inadequate in its discussion of land use policies and does not provide the level of detail needed for objective and reasonable decision making. A survey and analysis of local coastal policies in the state of California as they relate to OCS development should be completed. It should be noted that counties have taken a strong role in reviewing and conditioning OCS projects. Santa Barbara county has exerted a great deal of influence with regard to permitting of OCS projects. To not acknowledge the importance of local policies is to again ignore the role local agencies play in the OCS process. The MMS needs to assess the current circumstances with regard to land use policies of local agencies.

(3) Public Services

A completely inadequate discussion of public services. The only public service discussed is water use and wastewater, and these in very general terms. No discussion of law and fire protection is provided. This section should be re-drafted. A complete reformulation of this section is necessary as it provides no useful information for decision making.

(4) Vessel Traffic and Ports

This section does not discuss the ports at San Luis Bay and Morro Bay. This general and broadly termed discussion provides no discussion of vessel traffic, (namely tanker traffic) occurring off our county. The discussion broadly describes large harbors and does not provide any level of detail with regard to San Luis Obispo County ports and the potential for increased traffic. The county requests that information about the ports in the area and their current uses be provided.

b. Fisheries

(1) Commercial Fisheries

This section's findings do not comprehensively address the local commercial fisheries adequately. Fishermen work out of Port San Luis and Morro Bay and contribute greatly to the local economies. More information regarding the historical contribution of local fishermen and how they contribute to the local economy is needed. Although there is significant detail for the Santa Barbara Channel, there is very little detail for the Santa Maria Basin.

(2) Recreational Fisheries

This section's findings also do not comprehensively address the local recreational fisheries adequately. Although there is significant detail for the states of Oregon and Washington, these have been deferred until the year 2000 for consideration. For an area to be considered as early as 1996, the Santa Maria Basin is not adequately addressed.

d. Archaeological Resources

This section is wholly inadequate with regard to the archaeological resources in San Luis Obispo County. This section provides no discussion of the continuous 9,000+ year archaeological record that exist in the coastal areas of San Luis Obispo County. The Chumash archaeological record is a very significant and very important part of the county's history. By not including an accurate inventory of these resources, the MMS has failed to provide the level of detail necessary for analysis. This lack of data, which is readily available, is a large data gap and gives decision makers and the public an unrealistic picture of the archaeological resources in the county. MMS should complete a survey with the help of local archaeologists. The county is aware of several experts who can readily provide up-to-date information related to the Chumash culture.

In regard to potential offshore cultural resources, the EIR for the San Miguel project identified 17 possible sites submerged in the OCS. Extensive research regarding submerged sites should be completed.

e. Recreation and Tourism

Recreation: This section fails to discuss any of the areas in San Luis Obispo County with regard to recreation. Recreational activities are a very common and frequent use of the coastal resources of the county. The discussion provides no description of our area with regards to recreation areas or activities. The county requests that a description of these areas and activities be included.

Tourism: The Visitor's Conference Bureau estimates that in 1988 tourists generated over $375,000,000 of business in San Luis Obispo County. The county's dependence on tourism as an economic base is well known. The discussion is too broad for a person to get a complete picture of tourism and its importance to the county. The county requests that this section be revised to include data that will clearly represent the value of tourism within the county.

Chapter IV Environmental Consequences

This section begins the DEIS analysis of the specific impacts which can be expected from the base case, the high case, and the cumulative case involving OCS development. Both the base and high case however, erroneously assume that the Santa Maria Basin crude can be developed and transported through existing facilities.

On page IV.D-11, it states that "Transportation of hydrocarbons in the Southern California Planning Area would be from the expansion of the existing offshore pipeline system and onshore facilities. No new support facilities are assumed." In discussing impacts to coastal communities on page IV.D-416, it again states that "No additional onshore processing facilities, marine terminals, support facilities, or pipeline landfalls are anticipated ..." and therefore the impacts were not analyzed. This same rationale is also the justification for not studying the impacts to archaeological resources, coastal habitats, and shorebirds in the Pacific Region.

Since there is not an existing pipeline system developed or a landfall or onshore facilities available to utilize for the northern Santa Maria Basin blocks, the analysis of the 14 identified impacts, in both the base and high case, is incomplete and unacceptable. This is a major shortfall of the analysis since many of the impacts are greatest when construction of a landfall pipeline is required to connect the platform to land. Although the cumulative case does assume the need for an additional landfall, it is given only a cursory review and does not address the need for on-shore processing or support facilities.

We also note that there is no analysis whatsoever of the impacts on terrestrial mammals in the Pacific Region. Although there is a thorough analysis of impacts to beach mice in the Gulf of Mexico and to the caribou in Alaska, there is no discussion of possible impacts to the endangered Morro Bay kangaroo rat and/or its coastal habitat. There are other regionally declining ground-dwelling species such as the badger that need to be studied as well. Similarly, the impact on the endangered American peregrine falcon is studied in great detail in the Atlantic Region, but was missed entirely in the Pacific.

There is also no discussion of impacts upon coastal dune habitat and riparian vegetation. Previous studies have indicated there may be significant impacts to threatened or endangered plant species in the Pacific Region from on and offshore pipeline construction, routine maintenance activities, and emergency oil spill operations.

Environmental Impacts of Alternatives

This section of the DEIS describes the specific impacts that can be expected by going forward with the program as proposed. The document reviewed 14 different categories of issues that may be affected by the program. Based upon our review of the document, it appears that the cost to the environment will far exceed any potential benefits to be received from extracting the resource. Some of the more significant impacts discussed in the document that appear to have no or inadequate mitigation proposed are as follows:

1. Impacts on Marine Mammals

As a result of the expected oil spill in the Santa Maria Basin, there will be lethal effects on the endangered California sea otter. Depending upon the size and location of the spill, there will be fatalities anywhere from tens to hundreds of otters. Since at least 20 percent of the entire sea otter population is found between Morro Bay and the Santa Maria River, this could be devastating to the specie. The population recovery period could be up to six years or even longer. If a spill occurred south of San Nicolas Island, the small colony of 20 translocated otters would probably be eliminated. This is an unacceptable risk with no proposed solution or mitigation.

2. Impacts on Marine and Coastal Birds

The California brown pelican and least terns are expected to be significantly impacted by an oil spill. Both birds are listed as endangered on state and federal lists. Impacts to the California brown pelican would include having up to 1,000 birds oiled, with a survival rate of only 50 percent. Besides direct mortality, major disruptions in reproduction could be expected, with the potential loss of up to 25 percent of active nests. Expected outcome of any oil contact with a least tern colony would be similar causing the death of at least 50 pairs (5 percent of the population) and the complete disruption of the colony's reproduction cycle for that year. The overall effect upon both species would be, depending upon food availability, felt for up to four years or even longer. Oil spills will also have a major effect upon other seabirds causing up to 70 percent reduction in local species, particularly if the spill occurs during migration and breeding periods. This is also an unacceptable risk with no proposed solution or mitigation.

3. Impacts on Fish Resources

The DEIS notes that San Luis Obispo County has the southernmost steelhead spawning streams along the westcoast and in fact the only ones in the Southern California Planning Area. Although the fact is not emphasized, San Luis Creek is also used by salmon that were originally released through the efforts of a local non-profit organization. An oil spill contacting the entrance of a stream is predicted to cause a 20 percent reduction of the outmigrating population and take up to four years for recovery. Given the small number of steelhead that actually make it this far south though, we feel it would likely be devastating to the species. Since the most critical period for exposure to oil would be when a spill occurs along the spawning migration route or at the mouth of spawning streams, diversion from the spill would have major affects on the spawning success of that population.

4. Impacts on Coastal Habitats

The study does confirm that an oil spill will have staggering effects on local estuaries. The marsh and mudflat habitats would be the most sensitive. The

DEIS concludes that the impacts would be felt as follows: "Impacts from the 17 assumed spills will not be discernible from normal community population fluctuations within the Pacific Region except in Southern California where rare relatively unaltered estuaries could be dysfunctional for up to 10 years, virtually eliminating relatively healthy estuaries in the region for this period." This is a major problem and would negate the current efforts at the local and national level to protect and preserve the Morro bay estuary through EPA'S National Estuary Program.

5. Impacts on Coastal Communities

Since the DEIS made the erroneous assumption that no pipeline landfalls or onshore processing or support facilities would be necessary, none of the potential impacts were studied. This is obviously a major oversight and is discussed separately. The study does point out though, that offshore facilities may need up to 82 million gallons of water per year during peak production years. The conclusion reached in the DEIS is that "The overall cumulative impact to the Southern California water supply, when considering all other projects and general population growth, is expected to cause severe stress to water supply." Given the current shortages and overdrafting of water supplies in this county, this is a major issue that again is not proposed to be mitigated.

6. Impacts on Fisheries

Impacts to the commercial fishing industry are identified as being extremely significant. They are estimated at "...economic losses to the commercial fishing industry ranging from 20 to 30 percent lasting for two seasons and more than 10 percent unemployment of the fixed-gear fishermen and financial losses of 10 to 20 percent of economically dependent businesses." The study notes that these types of "inconveniences" will last for the 35 year life of each platform, but does not suggest any really effective solutions.

7. Impacts on Archaeological Resources

It is noted that "The greatest cumulative effects on archaeological resources are expected to occur as consequence of accidental oil spills resulting from the transportation of OCS and non-OCS oil. These effects include potential destruction of near-shore archaeological sites contacted by the spill, and would be due to clean-up activities as a result of the spill." Although nearshore resources were not emphasized because of inaccurate assumptions, the identified potential impacts should be mitigated by attempting to identify major sites that exist within the study area.

8. Impacts on Recreation and Tourism

In the event of an oil spill, the DEIS estimates it will take at least two seasons for the use of recreation resources to return to pre-spill levels. It also notes that merchants serving affected beaches will sustain an economic loss of up to 20 percent of their annual income if a popular beach is closed for a month during peak season.

It also reaches the conclusion that even though there may be up to 17 new platforms installed in the Pacific Region, the "overall effects on the viewshed is expected to be inconsequential." The reasoning is apparently that since there may be an equivalent number of platforms removed during the same time period, it will simply be a redistribution of the visible platforms. It does not take into account that no platforms, visible or otherwise, currently exist in the northern Santa Maria Basin. The analysis does make a cursory attempt to value "visual degradation impacts" from offshore oil platforms on property values. It indicated that the estimated loss of value, for an undescribed amount of property, will range from $250,667 to $334,223. The methodology was summarized on page 8-98 of the Comprehensive Program in the appendix, but its very unclear how that value was utilized in the benefit-cost analysis, if at all.

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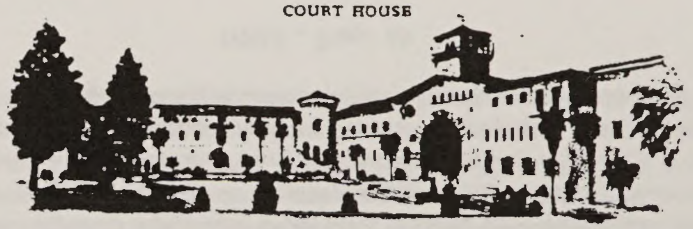

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COUNTY OF SANTA BARBARA

September 18, 1991

S. Scott Sewell, Director
Minerals Management Service
1849 C Street, N.W., Room 2525
Washington, D.C. 20243

RE: DEPT. OF INTERIOR FIVE-YEAR LEASE PLAN, 1992-1997

Dear Director Sewell:

The County of Santa Barbara currently is in the process of reviewing the *Proposed Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program 1992-1997* (Five-year plan) and Draft Environmental Impact Statement (DEIS) released in early August. We appreciate the fact that the MMS is conducting a public hearing in our County on these documents. We have a number of general comments on these documents which are discussed in the attachment to this letter. These comments are also being submitted to the Governor's Office for Environmental Protection. Our staff will be submitting more detailed comments to your office by the October 29, 1991 deadline.

Santa Barbara County commented on the Draft Proposed five-year plan last April in a letter to then-Director Barry Williamson. In addition, our comments were incorporated into Governor Wilson's April 24, 1991 comments on the Draft Proposed plan. Regrettably, we find that most of the changes we, and the State, requested for the five-year plan have been ignored. Our concerns with additional offshore oil leasing off our coast are significant; they have been expressed numerous times to the MMS and to the Secretary of the Interior, and have never been fully addressed.

Our previous comments on the Draft Proposed five-year plan recommended that the 87 tracts in our area proposed for leasing after 1996 be deleted from this plan. We reiterate that recommendation here. This area, the Santa Barbara Channel and Santa Maria Basin, should not be subject to additional leasing unless and until: (1) the Department of Interior recognizes that the ability of this County to absorb impacts resulting from existing OCS development, and existing potential development, is severely constrained and factors these limitations into the decision-making process; (2) a national energy policy is adopted and implemented that does not ignore the substantial contribution that increased energy efficiency and the development of renewable energy resources could make in reducing the nation's demand for oil; (3) lease sale stipulations and resource development regulations are formulated that require pipeline transport of crude oil from the production site to the refinery; and, (4) the leasing decision process is modified to recognize the potential planning costs to local agencies in accommodating onshore impacts of offshore oil development.

This County has participated many times in the OCS leasing comment process and has repeatedly recommended that fundamental changes be made in MMS's OCS leasing and development program. We recognize the difficulties in making such broad changes, but must stress that they are sorely needed to foster better relationships among the public, industry, and local and federal governments and to provide the necessary level of public and environmental protection.

Thank you for this opportunity to comment on the Proposed five-year lease plan and for your consideration of our concerns.

Sincerely,

E. DIANNE OWENS, Chair
Santa Barbara County Board of Supervisors

ATTACHMENT

cc: Senator Alan Cranston
Senator John Seymour
Representative Robert Lagomarsino
Representative Leon Panetta
James Strock, California Secretary for Environmental Protection
Doug Wheeler, California Secretary for Resources
Peter Douglas, Executive Director, California Coastal Commission

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SANTA BARBARA COUNTY GENERAL COMMENTS
PROPOSED COMPREHENSIVE OCS FIVE-YEAR LEASE PLAN, 1992-1997

National Energy Strategy

As a policy issue, the County of Santa Barbara's position is that a National Energy Strategy (NES) which recognizes a significant role for energy efficiency and development and use of renewable energy sources while identifying the need for and role of offshore drilling must be adopted before planning decisions on new offshore leasing are formulated. This is a necessary component of the required balancing of potential benefits of energy production versus the potential risk of environmental harm.

The proposed Comprehensive Plan assumes that future offshore leasing is justified on the grounds of meeting national energy needs. However, there is no adequate basis for that assumption, given the Administration's failure to include meaningful consideration of energy efficiency and use of renewable energy resources in the NES released in late 1990. While Santa Barbara County clearly has an interest as an area targeted by the Administration's favored approach to develop offshore fossil fuel resources, there is an even more significant national concern that the NES fails to provide guidance and direction toward a viable energy future for the nation. Only when an adequate, balanced NES has been adopted should any consideration be given to additional OCS leasing.

Energy conservation and efficiency should be the cornerstone of the country's energy policy, and the backdrop against which future oil and gas leasing decisions are made. Presently, the United States consumes 17 million barrels of oil per day. According to DOI figures, the average daily production from offshore oil wells in the OCS in 1989 was 712,824 barrels. This amount is just 4% of daily U.S. oil demand. By 2010, the OCS will provide only an additional 100,000 barrels of oil per day over current levels of production, according to the Administration's National Energy Strategy. This amounts to just one half of one percent (0.5%) of the total daily consumption. A recent report by the Natural Resources Defense Council (NRDC) suggests that energy conservation and efficiency measures that could be available today, would yield many times the amount of oil and gas thought to be available in the OCS. According to the report, efforts on achieving higher mileage for cars and light trucks alone would provide a saving of 2.93 million barrels a day by the year 2010. Encouraging (and requiring) many real and achievable measures to reduce the nation's appetite for oil would obviate the need for additional OCS development.

Pipeline Transportation to Refineries

The State of California and the County of Santa Barbara long ago adopted policies that require pipeline transportation (with minor exceptions) from onshore oil processing facilities to refinery destinations. These policies, of course, apply to crude oil produced on the OCS and processed onshore. We have continually commented to the MMS that all lease sales should have lease stipulations requiring pipeline transportation *to refineries*, not just to onshore processing facilities. The MMS has continually ignored this request.

Pipeline transportation of crude oil to refineries has been a volatile issue in OCS development for existing leases and development projects as well. The MMS has refused to participate in resolving these disputes as well, leaving local and state agencies to debate this matter with oil producers and shippers. In fact, the Pt. Arguello project demonstrates all too clearly how this refusal to participate by MMS, a refusal to require a producer/shipper such as Chevron to meet the environmental protection objectives of the OCSLA, can affect OCS production.

Santa Barbara County is now litigating the merits of pipeline transportation with Chevron rather than mitigating those impacts. All the while, OCS production is being suppressed by Chevron; rather than producing at 100,000 barrels per day, it is producing at 25,000 barrels per day. The travesty of this situation is that pipeline capacity exists to Chevron's refinery destinations of choice--Los Angeles--though Chevron refuses to use it and has opted instead for a more expensive pipeline/tankering scheme that endangers even more of California's coastline. The MMS should never again allow such a situation to occur.

The MMS's role in supporting pipeline transportation is crucial. It can be brought to bear in at least three ways. First, the MMS should establish lease stipulations requiring all OCS production to be transported to refinery destinations by pipeline. Second, MMS should adopt policies and regulations that eliminate the potential for OCS production to be processed offshore in federal waters (and thus circumventing local requirements). Third, we propose that the MMS begin, immediately, to establish, fund, and participate in a multi-agency task force to identify pipeline solutions, both new and existing, to transport OCS and other crude to refineries. This should *not* be a debate panel over the merits of pipeline vs. tanker transportation; the preference for pipeline transportation over other modes is already well established. The focus and goal of this panel must be on identifying and developing pipeline transportation systems for all crude oil produced in and offshore California.

Phased Development

The accelerated pace of prior leasing programs, together with the lack of national policy that governs the rate of future offshore activity, has placed significant burdens on local government infrastructures, contributed to air quality degradation, and has provided a very limited opportunity for local review of offshore leasing programs and "post-lease" decisions. In practice, the DOI has made most of the OCS development decisions unilaterally, thus leaving local governments to accommodate the environmental, socioeconomic and fiscal impacts as best they could.

Previous County comments on prior 5-year lease plans and proposed lease sales have opposed additional leasing in the Santa Barbara Channel and the Santa Maria Basin due to potential local environmental impacts, unresolved controversies arising from previously leased and developed tracts, and the existence of previously leased but as yet undeveloped tracts. One hundred and five (105) existing leases are still active in our region. Of these 105 active leases, 88 remain undeveloped. Increasing the size of the leased area makes little sense if current leases are undeveloped since major regional impacts could result from their development. The County's position has been, and continues to be, that plans for the existing leases and the resulting cumulative impacts should be developed and publicly reviewed before further leasing is considered.

Onshore Infrastructure

Statements located throughout the DEIS regarding onshore support facilities are based on incorrect assumptions. The DEIS predicts that seven new platforms could result from this new proposal. The DEIS also assumes that the current infrastructure is adequate to support offshore development until the year 2030 even though the current infrastructure is designed to last through the life of the existing projects, which is approximately 15-25 years from today. This assumption is incorrect. Extensive impacts, particularly those related to systems safety and air quality, would result from operating existing facilities unchanged until 2030, well beyond the expected lifetimes for which they currently are designed. Further, additional land use impacts will result simply from the use of these facilities for 50 years rather than 25 years as was originally reviewed and approved by the County.

Additionally, the DEIS fails to assess the demands from previous lease sales in the Santa Maria Basin for onshore facilities such as processing and service base needs. For example, page IV.D-234 of volume one of the DEIS states: "*...it is assumed that no new onshore support facilities will be necessary, since existing facilities are adequate*". This assumption is incorrect for several reasons. First, there are no onshore support facilities in the northern Santa Maria Basin that could be used to transport and process OCS production. Any development in the northern Santa Maria Basin will require at a minimum, one pipeline landfall site, and one consolidated processing facility. Secondly, existing onshore facilities are designed only for the life of existing projects. They were not designed or permitted to handle future OCS development. This assumption is used in the next paragraph to conclude: "*As a result of the proposal, no new onshore facilities are expected to be constructed.*" Since the document does not provide any additional discussion or analysis on how this conclusion is derived the reader is left to assume the following: (1) that OCS production in northern Santa Maria Basin will be processed and stored from an offshore facility; or, (2) that construction of onshore facilities will result from development of existing, but not yet developed leases in the northern Santa Maria Basin, and that these facilities will also be used to support future OCS development. As we noted above, existing facilities for existing projects in Santa Barbara County have a projected life of only 15 to 25 years. Future projects will extend the life of, and environmental impacts from, these existing facilities.

Programwide and Areawide Policies to Reduce Environmental Risks

The County of Santa Barbara and the State of California have continually commented that instead of waiting until the individual lease sale stage to evaluate possible requirements to reduce environmental risks such as lease stipulations, DOI should begin the process of evaluating and developing policies that deal with these measures at the five year lease program stage. The policies could then be adapted and tailored to fit regional and local circumstances.

This approach would provide a policy framework in which to evaluate specific projects and mitigation needs at the leases sale stage. In addition, it would provide greater certainty for the public that environmental concerns would be addressed and greater predictability on the part of industry.

Programwide and areawide policies should be considered by DOI that address all relevant issues areas including the following: the use of pipelines as the environmentally preferable transport mode, oil spill contingency planning, protection of biologically significant areas, protection of commercial fisheries, protection of marine biota, and protection of air quality.

In particular, the DEIS should discuss the Socioeconomic Monitoring and Mitigation Program (SEMP) required by the County in its approvals of major onshore support facilities for OCS development. The SEMP is an ongoing program (funded by the project applicants) to identify and mitigate specific impacts to housing stock, schools, public services, etc. that have resulted from construction and operation of the major oil and gas projects in this area. This program has been supported by industry and could serve as a model for socioeconomic impact analysis and mitigation. A considerable amount of socioeconomic baseline information that should be included in the DEIS has been collected and is available through this program.

Local Laws, Goals, and Policies

Previous comments by Santa Barbara County have reiterated the importance of local laws, goals and policies. Santa Barbara County has long advocated comprehensive planning to address the wide range of local impacts resulting form OCS development. Of highest importance are Santa Barbara County's and the State of California's policy preferring pipeline transportation of crude oil to refineries, and requiring such transportation when pipelines exist yet, MMS continues to ignore these important policies.

Consideration of Environmental Impacts in Leasing Decisions

The County is concerned that environmentally sensitive areas have not received adequate consideration in the proposed 5-year plan. The following examples illustrate the lack of

serious consideration of environmental impacts in the proposed program's leasing decision process. Alaska's Hope Basin ranks number one on estimated marine productivity and environmental sensitivity, and near the bottom of the ranking for recoverable hydrocarbon estimates. Cook Inlet ranks number six in environmental sensitivity and marine productivity and is at the bottom of the ranking for recoverable estimates. However, lease sales are proposed in both areas. It appears that industry interest, which ranked Hope Basin number 19 and Cook Inlet 14 out of 26 planning areas, is the only explicit criteria that enters into the lease sale decision process.

The County of Santa Barbara urges DOI to adopt a balanced approach to decisions to include an area in the 5-year program. The approach should be based on an explicit consideration of relevant criteria as described in the Outer Continental Shelf Lands Act: geographical, geological, and ecological characteristics; an equitable sharing of development benefits and environmental risks; the location of regions with respect to other uses of the sea and seabed, including fisheries, navigation, etc.; and the laws, goals, and policies of affected states. The weight or importance of each criteria to the leasing decision should be clearly stated.

Air Quality

No additional OCS leasing should occur until air quality regulations are in place that require OCS development to be fully consistent with onshore air quality requirements. The proposed lease plan should state that all OCS petroleum development activities will abide by the Clean Air Act Amendments of 1990. With the adoption of the Clean Air Act Amendments, the state and local air pollution agencies will have a new role in regulating air pollutants from OCS facilities. It is important that the concerns of the state and local air pollution agencies be addressed during all phases of OCS activities, including the pre-lease phase.

Oil Spills

A primary concern associated with leasing of the OCS is that technology to prevent, control and clean up oil spills is not adequate to protect marine and coastal natural, social, and economic resources. Recent studies of OCS safety, and offshore wind and wave conditions in the Santa Barbara Channel and Santa Maria Basin must be fully considered in the EIS's evaluation of oil spill potential and the discussion of the location and nature of spills impacts. Spills adjacent to or affecting the Santa Barbara Ecological Preserve and Buffer Zone, the Santa Barbara Channel Islands National Marine Sanctuary, and Channel Islands National Park are of particular concern. The EIS must fully consider the potential effect of active faulting, unstable sediments prone to slumping, submarine landslides, liquefaction, and ground acceleration in increasing the probability of catastrophic oil spills through failures of a platform or pipeline. Conflicts with navigation which could result in collisions should also be considered and tracts wholly or partly within vessel traffic separation systems should not be leased.

Cumulative Impacts

While the DEIS includes a surficial discussion of the cumulative impacts of OCS leasing in the Southern California Planning Area, it in no way quantifies the cumulative effect of OCS leasing. We believe that the DOI must greatly expand coverage cumulative impacts on air and water quality, marine biological resources, endangered and threatened species, land use, and archeological resources. Further, DOI must evaluate the cumulative potential that leasing in areas known to have geohazards will result in a catastrophic failure of pipeline or platform and the impact of such an event on the resources of Santa Barbara County.

The DEIS should address cumulative impacts with respect to the availability of refineries' and processing facilities' capacity to process the high-sulfur, heavy crude oil expected to be found in much of the northern Santa Maria Basin. Inability of refineries to process this lower-grade oil in the past has resulted in the shipping of crude to the Gulf states or to Japan. Production of crude from the proposed 87 leases, then, indeed may not back out foreign imports of oil, as the DEIS claims.

Lack of Alternatives Considered

Other than the "No Sale" alternative and the proposed action of leasing areas after January 1, 1996, the DEIS does not provide the Santa Barbara Channel and the Santa Maria Basin with any other options. Because of the region's environmental sensitivity, we believe that other alternatives that include establishing coastal buffers and slowing the pace of leasing, as has been considered in other areas, should also be considered for the southern California Planning Area. In 1981 and 1983, the California Coastal Commission issued a determination that offering lease tracts in the Santa Maria Basin for Lease Sale 53 and 73 was inconsistent with the California Coastal Zone Management Program. Shortly after this determination, the California Coastal Commission entered a Memorandum of Agreement (MOA) with the DOI regarding lease stipulations for Lease Sale 73 and the deletions of 22 blocks in the Santa Maria Basin. Seven of the blocks now proposed for leasing were among the 22 deleted through the MOA. The State of California has made it very clear on numerous occasions that many of the specific tracts that could be offered for lease under the proposed plan should **not be** put up for bid due to their environmental sensitivities. The proposed plan and DEIS offer no sound reason for once again putting these tracts back on the auction block.

Revenue Sharing

As we have noted in the past, federal revenue sharing to aid local communities experiencing sudden and large costs directly attributable to oil production in federal waters is long overdue. The County continues to be frustrated by providing the onshore infrastructure for

offshore development without receiving commensurate support from lessors for unmitigable, significant impacts. While equitable federal revenue sharing would create desirable funding sources, it is **not** to be construed as a substitute for addressing all other concerns. We believe that such funds could serve two important purposes. First, they would allow local jurisdictions to initiate and ultimately develop land us policies and other programs that accommodate offshore development. Santa Barbara County, which has had a head start in such planning, still requires additional policies and planning for development from existing and leases. Second, such shared revenues could be used by local agencies to mitigate residual significant impacts from offshore and related onshore development. Examples could include parks improvements, acquisition of open space, fisheries programs, and habitat restoration.

Equitable Sharing Among Regions

Currently, production exists in federal waters only in two regions: California and the Gulf of Mexico. The proposed plan in this respect does not provide for a full "equitable sharing" given that future production has the highest probability of again occurring in these two regions.

Santa Barbara County has granted permits for three major oil and gas processing plants, a marine tanker terminal, a cross-country oil pipeline, and other onshore support facilities. The DEIS does not fully address potential impacts related to processing, transportation, and refining capacity. Historically, and again in the proposed 5-year plan, DOI has not fully addressed the impacts associated with these downstream facilities. Yet, the specific type of facilities used and their locations will greatly affect the extent and nature of the onshore impacts. At the same time, these downstream facility needs could represent a growing constraint on OCS production. These issues should be fully addressed in the proposed plan and DEIS.

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County of Santa Barbara

RESOURCE MANAGEMENT DEPARTMENT

John Patton, Director
Phil Overeynder, Assistant Director

October 29, 1991

S. Scott Sewell, Director
Minerals Management Service
1849 C Street, N.W., Room 2525
Washington D.C. 2043

RE: SANTA BARBARA COUNTY COMMENTS ON THE DEPARTMENT OF INTERIOR'S PROPOSED FIVE-YEAR LEASE PLAN 1992-1997

Dear Director Sewell:

The County of Santa Barbara has completed its review of the *Proposed Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program 1992-1997* (Five-year plan) Draft Environmental Impact Statement. General comments on these documents were approved by the Santa Barbara County Board of Supervisors on September 17, 1991 and submitted to your office and to the California Governor's Office of Environmental Protection on September 18, 1991.

As mentioned in our Boards general comments to your office, staff would be providing technical comments on the lease sale Draft EIS. The following comments are a section-by-section technical review of the Draft EIS. The comments address the analysis of the Pacific Region with an emphasis on Santa Barbara County, the Santa Barbara Channel, and the Santa Maria Basin. The county's DEIS comments are divided into two sections. Section one contains a general overview of the DEIS. Section two is a more detailed analysis of the DEIS.

Thank you for this opportunity to comment on the proposed five-year lease plan and for your consideration of our concerns. Should you have any questions regarding the attached comments, please contact me at the Resource Management Department, Energy Division at (805) 568-2040.

Sincerely,

John Zorovich

JOHN ZOROVICH
Planner

ATTACHMENT

cc: Senator Alan Cranston

Energy Division
1226 Anacapa Street, 2nd Floor, Santa Barbara, CA 93101
PHONE (805) 568-2040 FAX (805) 568-2522

Senator John Seymour
Representative Robert Lagomarsino
Representative Leon Penetta
James Strock, California Secretary of Environmental Protection
Doug Wheeler, California Secretary of Resources
Peter Douglas, Executive Director, California Coastal Commission

SANTA BARBARA COUNTY SPECIFIC COMMENTS
PROPOSED COMPREHENSIVE OCS FIVE-YEAR LEASE PLAN, 1992-1997

I. GENERAL COMMENTS

Lack of Detailed Information

1. Reviewing the DEIS should give the reader an opportunity to explore the probable consequences of the proposed five year lease program. The purpose of the DEIS should be to provide an understanding of the magnitude of potential impacts of the proposal relative to: (1) the existing environment, (2) the potential impacts of other existing and reasonably foreseeable actions/developments in the vicinity of the proposed lease tracts, and (3) the potential impacts of the alternatives to the proposal that are presented in the DEIS (including the Energy Alternatives discussion that is buried in the Appendices of this document). This level of understanding is what NEPA requires of an adequate EIS and is the minimum level of understanding needed to make an informed decision regarding adoption or denial of this proposal, or an alternative to this proposal.

   This is also the minimum level of understanding that the document must provide to be of any use to the planning/resource management bodies of the local county governments that will be directly affected by offshore oil and gas development.

   Unfortunately, the DEIS is inadequate for this purpose. The Table of Contents raises hopes that the document would yield this level of understanding to the persistent reader because of its thorough and methodical nature, however, the body of the document fails to deliver what the Table of Contents promises. There is a decided lack of substance in the text. Generalized discussions are probably unavoidable when so broad a proposal is considered but the Draft EIS has some fundamental flaws that need to be corrected if the document is to be of any use to decision makers and the interested members of the public.

   Assumptions must be clearly stated and justified and, where these assumptions are used to generate secondary assumptions, the logic and justification for this extrapolation must also be presented and justified. Clarity and justification is especially critical for key assumptions that affect the entire document such as the assumptions concerning the amount of hydrocarbons to be leased, discovered and developed (the resource estimates) and the level of OCS activity and oil spills that will result from that amount of hydrocarbons. These assumptions are critical as they drive the base case, high case and cumulative impact assessments for all issue areas.

2. The CONCLUSION paragraphs of each resource area (i.e., air quality, water quality, etc.) for each Case and Alternative should include a statement that summarizes the magnitude of the potential impacts to that resource relative to the base case impacts. These comparisons should be as specific as possible. Even where specific or absolute comparisons are not possible, it should be possible for the preparer of each section to make general comparisons such as "greater than", "less than" or "indistinguishable from" impacts associated with the base case. This would do much to facilitate a reader's understanding of the Proposal and the comparison of options, which is crucial to the decision making process.

3. In the vast majority of the Draft EIS, the potential impacts in the Pacific Region are discussed as if they are to be distributed evenly throughout, or sustained by, the entire region from Cape Flattery, Washington in the north to the California/Mexico border in the south. This perspective artificially diminishes the apparent magnitude of the potential impacts by averaging them over large areas. A more (physically and biologically) realistic and meaningful discussion should be added to impact sections to emphasize the fact that most of the potential impacts are likely to be sustained by very small, relatively closed-system subareas of that region; particularly offshore Santa Barbara and San Luis Obispo Counties in the Santa Barbara Channel and the Santa Maria Basin where all of the proposed lease tracts for this region are located.

4. The DEIS often ignores the interrelatedness of various physical and biological systems when impacts are discussed. Significant follow-on or secondary impacts should be considered when assessing the magnitude or significance of an impact.

5. Omissions occur throughout the document in both the marine water quality and marine biological impacts discussions. For example, in sections that present the impacts to estuaries, the impacts to species/biological communities that rely on the estuaries will probably lead to secondary impacts to migratory birds, commercial fisheries and local economies yet these relationships are not discussed. In sections which deal with marine water quality impacts, degradation of water quality around platforms and outfalls probably affects biological populations in the same area, which could lead to population level or regional level effects. In some cases secondary impacts could persist longer and be considered equally as significant as the primary impact under consideration.

II. SPECIFIC COMMENTS

Executive Summary

Socioeconomic Environment

6. Page V, paragraph 3. The statement is made that "*No substantive land use impacts are expected to result from implementing the proposed action in the Atlantic, Pacific, or*

Gulf of Mexico Regions." This statement is incorrect and very misleading within any part of the DEIS particularly in an Executive Summary. It is vital that the MMS realize that activities related to OCS development have direct land use impacts. Studies in Santa Barbara County related to OCS development have documented significant land use impacts involving onshore processing facilities, marine terminals, pipelines, highway and rail transport of hazardous materials, roads, infrastructure development and other land use impacts. The DEIS has failed to address the onshore land use impacts resulting from OCS development. The revised EIS should fully address the land use impacts from leasing and development.

Chapter III Affected Environment (Pacific Region)

Geology

7. Page III-99, Geology and Hydrocarbon Potential. Both the Santa Maria Basin and the Santa Barbara Channel are considered to be geologically complex regions. The seismic description of these two areas is vague and inadequate. The statement is made in the DEIS that the offshore Santa Maria area lies adjacent to one or more seismically active faults and, therefore, may be expected to experience seismically induced ground motion. The DEIS notes that "*Although there is an extensive seismographic network onshore southern California, the coverage offshore is sparse. Seismicity data are scant and inconclusive.*" This statement indicates a serious and possibly hazardous lack of seismic data. Before any decisions regarding further offshore oil activities occurs, the area needs to be thoroughly studied. The Point Pedernales and San Miguel project EIRs provide significant information related to seismicity. Data from these two reports should be incorporated into this section. Included in this section should be a discussion of the area's hydrocarbon potential as the title suggests.

8. Page III-102, Shallow Gas and Overpressurizing. The Santa Maria Basin is not discussed in this section of the document even though the Point Pedernales project EIR/EIS and San Miguel EIR/EIS document shallow gas zones in the Santa Maria Basin. The county requests that more information describing shallow gas zones and overpressurizing be gathered before additional leasing is considered in the Santa Maria Basin.

Physical Oceanography

9. Page III-104. This section is wholly inadequate with regard to the oceanographic process in the Santa Maria Basin. Though extensive discussion is provided with respect to Washington, Oregon and the Southern California bight, the Santa Maria Basin is completely neglected. Due to the lack of discussion, it would appear that not much is known about the Santa Maria Basin. Therefore, we request that this area be thoroughly studied before any leasing of tracts is completed and the EIS should identify this area for future study.

Water Quality

10. Page III-107. Wherever possible, the document must discuss the magnitude of impacts relative to the expected baseline conditions. For example, the document states that natural seeps contribute significant amounts of hydrocarbons to marine waters. It would be helpful to know what average concentration of hydrocarbons (ug/l) results from these seeps. This could then be compared to the concentration of 100 ug/l, which is given as the maximum level likely to result from oil spills in the marine environment.

11. Page III-109 (Estuarine). This section does not describe or mention the Santa Maria River Estuary, the Nipomo Dunes complex, and the Morro Bay Estuary. The Morro Bay Estuary has been nominated by Governor Pete Wilson as a candidate for EPA's National Estuary Program. The absence of any reference to these pristine and nationally significant estuaries in the DEIS leads one to conclude that the MMS has not even summarily studied this area.

Air Quality

12. The Clean Air Act Amendments of 1990 requires the Environmental Protection Agency (EPA) to develop regulations for the control of air pollution from OCS operations. Regulations of OCS operations within 25 miles of a state boundary must be the same as onshore requirements. The importance of these regulations in the attainment of state and federal air quality standards cannot be overemphasized.

    The OCS Comprehensive Program 1992-1997 Summary and Decision Document and the Environmental Impact Statement all conclude that OCS development will not result in significant adverse air quality impacts. This conclusion will only be true if best available control technology (BACT), the same as onshore standards, is applied to the proposed OCS projects and if all residual emissions increases of non-attainment pollutants are offset which then creates a socioeconomic impact because an unproportional share of offsets may be devoted to OCS development at the expense of growth in other economic sectors and overall regional economic diversity.

    Modeling projections have shown that OCS emissions increases have the potential to degrade onshore air quality (particularly with respect to the California and national ozone standards). The projected impacts noted in the OCS Comprehensive Program 1992-1997 are considered to be significant. In the absence of the application of BACT and offsets to the proposed OCS projects, significant emissions increases would occur. Therefore, no lease sale should take place until regulations are in place which require the same BACT and offset requirements on the OCS as onshore.

13. Page III-113, Table III.C.1-2. The California Ambient Air Quality Standards have been updated since 1988, primarily for visibility reducing particles. A copy of the latest California Air Resources Board publication is attached (ARB Fact Sheet 38, revised 6/90).

Socioeconomic Environment

14. Page III-149. The attempt to provide an overview of the entire west coast socioeconomic environment in only a few pages is inadequate for any type of OCS activity. The socioeconomic environment along the west coast is complex and not extensively researched. The interrelationship between regions from a social and economic standpoint is not well known or understood. To attempt an EIS socioeconomic analysis based on an overview of conditions in the three coastal states is unacceptable. At a minimum a socioeconomic analysis of individual coastal counties adjacent to lease tracks and the potential socioeconomic effects from offshore development should be thoroughly researched and presented.

The County of Santa Barbara is concerned that overall attention and research efforts which address socioeconomic aspects of lease sales and development efforts by the MMS is inadequate. The MMS recently canceled funding for two important socioeconomic studies in the Santa Barbara Channel. These studies were canceled after requests for proposals were issued and interested consulting firms and academic institutions had responded with proposals. The two studies commissioned and then canceled by MMS were: Santa Barbara Channel Case Study: Socioeconomic Analysis and Chronology and Social adaptations to Changes in the Fishing Industry in the Santa Barbara Channel Area.

Santa Barbara County firmly believes such studies are critical to the understanding of socioeconomic impacts from offshore lease activities. The County strongly urges the MMS to reinstate funding and award contracts to allow these studies to be undertaken as quickly as possible. Site specific socioeconomic analysis will be critical to addressing impacts from OCS activities into the foreseeable future. Given the need to address OCS leasing impacts on the socioeconomic conditions onshore of the lease area, the treatment of socioeconomic impacts and related analysis as set forth in the Draft Environmental Impact Statement are inadequate.

15. Page III-150. This discussion provides very little information with regards to specific land use policies. Santa Barbara County has taken a strong role in reviewing and conditioning OCS projects and has exerted a great deal of influence with regard to the permitting of OCS projects. Before additional leasing is considered, the MMS needs to assess the current circumstances with respect to land use policies of local agencies.

Chapter IV Environmental Consequences

Assessment of Programmatic Concerns

16. Section IV.B.1. We find the MOU procedure, as worded here, to represent an inequitable favoritism towards offshore oil and gas development, compared to other land uses. Vandenberg Air Force Base is a strategic location for launching satellites into polar orbit because the trajectory is directed over unpopulated and undeveloped offbase areas. Base officials have repeatedly stated that development within their Flight Safety Ranges poses an unacceptable risk. Such development, they state, would cause the base either to close down launches or seriously alter its program.

For this reason, the Air Force is seeking to acquire a restrictive easement which would largely prohibit development on land outside the base which underlines the trajectory area of such orbits. Quoting from the Final Environmental Assessment for this proposed acquisition (dated July, 1990):

> *Because of its unique location on the California coast, Vandenberg AFB can launch space vehicles into polar and high-inclination orbits without flying over populated areas. This ability to launch over open water near only sparsely populated land areas is necessary for the maintenance of a controlled launch safety program. Vandenberg AFB is the only location with the contiguous United States where hazards from southern launches of space vehicles can be maintained at acceptable safety levels.*

This restrictive easement must apply equally to offshore areas which are within an equivalent level of risk. To prohibit development onshore while allowing full development offshore undermines the credibility of the stated mission of VAFB. Reference to "hold-harmless" agreements do nothing to address the risk to offshore platforms from falling debris and the risk of an oil spill. The best resolution is to eliminate tracts numbers 5281, 5382, and 5586. Additionally, tract numbers 15, 17, 18, 61, 62, 63 and 105 must be further examined since they underlie the trajectory for the western missile test launches.

17. Page IV.D-9, Figure IV.D.1.a-10 Assumed Pace of Development in the Southern California Planning Area. What happens to the gas cap after depletion of oil? Development of this cap after depletion should be reflected in the graph.

The curve in Figure IV.D.1.a-10 hardly makes a case to justify 7 platforms economically. Oil production at peak year reaches only 38 MMB. Divided by 365 days in the year, that disaggragates to approximately 104.1 MBD at peak year; divided by 7 platforms, that averages less than 15 MBD per platform at peak year; not much of an economic incentive by today's standards. Substantially increasing oil process would render this level of production to be economically attractive. In such a case, however, we can expect far more than just 7 platforms for the 87 tracts.

Impacts on Air Quality - Base case

18. Page IV.D-41, fifth complete paragraph, first sentence. The document states that "*northern Santa Barbara County portions of the South Central Coast Air Basin are in compliance with the Federal ozone (O_3) standard*". This statement is incorrect. Under the Clean Air Act Amendments of 1990, the entire County of Santa Barbara is considered a moderate nonattainment area for the Federal ozone standard.

19. Page IV.D-43, Table IV.D.1.a-11, Project Emissions. The annual NO_x emissions (per platform) for Production Support Boats in this table are underestimated. The Santa Barbara County APCD has estimated annual NO_x emissions from crew and supply boats in the OCS to be as much as ten times higher (greater than 20 tons per year) for individual platforms located in Santa Barbara Channel (existing and future). This estimate includes boat emissions in transit back and forth to the platforms as well as at the platform. Support vessel transit emissions will vary, depending on the location of a platform, the trip mileage from port, the frequency of trips, and the level of emissions controls. Did the support vessel figures presented in this table include transit emissions from crew and supply boats? If so, please elaborate on the assumptions.

    Such large quantities of NO_x emissions distributed throughout the Santa Barbara Channel from support vessels could potentially cause or contribute to ozone violations onshore. Current Santa Barbara County APCD programs require NO_x emission reductions on boats associated with OCS projects. Such a program should be required for all California OCS operations.

20. Page IV.D-45, third complete paragraph. It is predicted that a 1 to 5 ppb incremental increase in onshore ozone levels may result from one or more offshore production platforms. This is considered a significant impact by the Santa Barbara County Air Pollution Control District and the California Air Resources Board when it occurs in an ozone nonattainment area such as Santa Barbara County.

Impacts on Marine Mammals - Base case

21. Page IV.D-87, fourth paragraph. The document states that there is "*no information available on the potential impacts of exploratory and development drilling operations and platform and subsea pipeline construction activities on sea otters.*" On page IV.D-89, however, the DEIS concludes that "... *no impacts are expected from these routine operational and construction activities*". Since there is no information available on this subject, please provide an explanation as to how the MMS came to this conclusion.

Socioeconomic - Base case

22. Page IV.D-282, paragraphs 4 and 5. In the discussion of oil slicks occurring on the ocean as a result of small oil spills a comparison is made to natural seeps in the Santa Barbara Channel. The statement is made that recreation use of Santa Barbara County beaches has been unaffected by such natural seeps and the assumption is then made that the overall impact of small oil spills on beach use is anticipated to be negligible. This statement provides an incorrect comparison, given that human induced oil spills often contain a partially refined petroleum product that responds differently than the natural petroleum seep occurring at Coal Oil Point. Though recreational usage may not be curtailed by the natural petroleum seepage offshore, the presence of various sized globs of petroleum which wash ashore and cover the beaches creates numerous problems for beach users.

Exploration and Development Assumptions - High case

23. Page IV.D-289. The document needs to clarify why the 87 tracts to be offered in the Southern California lease area are likely to result in only 7-12 platforms (as opposed to a number nearer to 87). The high case scenario seems to be a rather low estimate in terms of the number of platforms and the associated infrastructure required to support the development. Can the MMS impose a ceiling on development of the 87 tracts that will ensure these estimates are not exceeded if the Proposal goes forward? If they cannot, then the needs of the local governments that are trying to plan with this development in mind would be better served by presenting a "worst case" high scenario.

Exploration and Development Activities and Assumptions - Cumulative case

24. Page IV.D-449. The cumulative impact assessment (Section IV.D.1.c) is particularly important because it is the only section that in any way considers the total environmental burden to be borne by the Pacific Region during the approximate 35 year "life" of the actions resulting from the Proposal, yet the proposed actions and assumptions for the cumulative case are particularly difficult to follow. For example, Table IV.D.1.c-2 (Exploration and Development Activity Cumulative Case) shows 18 platforms to be installed while Table IV.D.1.c-3 shows 17 platforms. These Tables should agree. The following discrepancy should also be explained: Table IV.D.1.c-3 shows no (zero) pipeline landfalls for the cumulative scenario, yet on page IV.D-476-second paragraph (Pacific Region Impacts on Water Quality) it is assumed that one pipeline will be constructed to a shoreline landfall in the northern Santa Maria Basin under the cumulative scenario.

25. Page IV.D-449. Does the cumulative case include any assumptions as to the likely future actions on the numerous tracts offshore Santa Barbara County that are leased but have yet to be explored and/or developed? If it does, the assumptions are not

clear. This discussion is extremely important and must be clarified if it is included or added if it is not presently included.

State Oil and Gas Development

26. Page IV.D-459. The recent proposed Southern Pacific Pipeline Project should also be included after or as a supplementary discussion of the Southern California Pipeline System (SCPS). These are two proposals for essentially the same project with the same objective for crude oil transportation out of Santa Barbara County to refinery destinations in the Los Angeles area.

Impacts on Water Quality - Cumulative case

27. Page IV.D-476. The discussion of oil spills for the cumulative case is inadequate. Much of the discussion of oil spills (predicted to occur as a result of all types of activity under the cumulative case) is left for the Pacific Region Impacts on Water Quality section of the cumulative case. The spill predictions should be discussed in the Oil Spills Assumptions section of the cumulative case (pps. IV.D-448-450).

Impacts on Air Quality - Cumulative Case

28. Page IV.D-487, first partial paragraph, last sentence. The documents states that the Santa Barbara County APCD estimates of OCS emissions values (Table IV.D.1c-9b) are higher than those of Jacobs (Table IV.D.1c-9a). One of the factors that may contribute to the differing estimates is emissions attributed to support vessels.

29. Page IV.D-487, third paragraph. The Santa Barbara County APCD 1989 Air Quality Attainment Plan (AQAP) showed through AIRSHED photochemical modeling that substantial OCS emission reductions would be necessary for the APCD to attain the national ozone standard (12pphm). While ozone precursor emissions from OCS activities may not be greater than 20 percent of total precursor emissions in Santa Barbara County, the significance OCS emissions in achieving attainment of the state and federal ozone standards. Any increase in ozone precursor emissions that may result from the proposed OCS Comprehensive Program 1992-1997 will have a significant impact on ozone attainment in Santa Barbara County.

Impacts on Marine Mammals - Cumulative case

30. Page IV.D-515-523. The CONCLUSIONS in the cumulative case section for Marine Mammals should include a discussion of the magnitude of potential impacts relative to the likely impacts of the cumulative development scenario without the Proposal. This is missing from most of the marine biological resource sections.

Impacts on Coastal Habitats - Cumulative case

31. Page IV.D-601. The CONCLUSION in the cumulative case section for Coastal Habitats focuses on estuaries throughout the entire Pacific region first, then on estuaries in southern California. What should be emphasized is that the tracts proposed for leasing, and therefore the most likely sites of operational spills, are located proximal to four of the eight estuaries listed as being relatively unaltered (pristine). These estuaries have a higher probability of being affected by oil spills (resulting from this Proposal) than the rest of the estuaries in the Pacific Region. The significance of such impacts is realized when the analysis considers the magnitude of impacts at the local level. Another example is found in section IV.D.1.c(3) (Cumulative Case, Pacific Region, Impacts on Seafloor Habitats) on pg. IV.D-613; this section's CONCLUSION states that impacts from oil spills will not be discernable from normal (live bottom) community population fluctuations within the Pacific Region overall. The local impacts, which could be quite profound and much greater than normal fluctuations, are not mentioned.

32. Page IV.D-628. The document states that the cumulative impact of the demand for water to support offshore oil development, combined with other uses, is expected to cause "*severe stress to water supply*". Given the current water supply shortages in Santa Barbara County, a description of how this impact will be mitigated should be included in the EIS, if such mitigation(s) exist.

Impacts to Commercial Fisheries - Cumulative case

33. Page IV.D-640, seventh paragraph. The DEIS estimates that the economic losses to the commercial fishing industry will range from "... *20 to 30 percent lasting from two seasons and more than 10 percent unemployment of the fixed-gear fishermen and financial losses of 10 to 20 percent of economically dependent businesses.*" According to the DEIS, these "inconveniences" are expected to last for the 35-year life of the program. We consider these impacts to the commercial fishing industry to be significant and suggest that the EIS propose mitigation which effectively reduces the expected losses to the fishing industry.

Impacts on Recreation and Tourism - Cumulative Case

34. Page IV.D-663, paragraph 4. The statement is made that because of possible removal of existing offshore facilities in the Southern California Planning Area coupled with the introduction of new offshore facilities that the overall effects on the viewshed are expected to be inconsequential. The introduction of new facilities in a pristine viewshed can not be deemed inconsequential given facilities are removed in another area unrelated to an impacted viewshed. The statement is made that some new platforms will likely be installed in areas out of sight from the coast. If the platforms will be placed beyond the horizon this statement is possibly true; however,

it is doubtful that the platforms would be placed that far out to sea and would remain visible from the coastline. This statement needs to be clarified as it is misleading. Each intrusion of a facility on a viewshed should be considered an impact on a specific viewshed area. The Draft EIS needs to address aesthetics in more detail on an area-by-area basis.

35. Page IV.D-663, paragraph 5. The statement is made that the area displaced by oil and gas platforms will be unavailable to boaters, but the overall effects on recreational boating will be undetectable. The word undetectable is misleading. If the platform is visible to an individual by being in the vicinity of recreational boating activities then it is not undetectable. This paragraph needs further clarification.

36. Page IV.D-664, paragraph 2. The statement is made that spectators drawn to view an oil spill disaster will offset some of the economic loss experienced by merchants due to the reduction in recreational activities. This statement has no foundation, is misleading, and is not substantiated by any study involving socioeconomic impacts from marine oil spills. The premise of the paragraph is false and the paragraph should be stricken from the EIS.

Employment and Demography - Alternative II (No Action Alternative)

37. Page IV.D-680. The assessment of oil spill impacts on employment and demography land use, public service/water supply, and vessel traffic is inadequate for the Pacific Region. The assessment does not take into account concentrations of human populations within the region, conflicting land use and vessel traffic. The statement that land use, public service/water supply would not be affected by the assumed tanker spill is incorrect and totally misleading. A wide variety of land uses can be affected by a spill, public services are proven to be adversely affected by an oil spill as public service manpower and resources are redirected to oil spill response activities. The blanket statement that water supply systems will not be affected is incorrect. As more desalination plants are developed for southern California coastal cities, the potential for impact from oil spills increases.

Recreation and Tourism - Alternative II (No Action Alternative)

38. Page IV.D-682 In the section addressing impacts on Recreation and Tourism for the Pacific Region the statement is made that recreation resource users will be temporarily displaced and local merchants who derive income from those users will experience an economic loss. This statement exemplifies the need for a more comprehensive analysis of potential socioeconomic impacts. Statistics from a recent study completed by the County of Santa Barbara Resource Management Department, related to the importance of the tourism industry to the County may help. For example, in 1988, there were 51 establishments involved in the sporting goods and bicycle retail trade, employing more than 260 persons with an annual payroll of

$2,461,000. Hotels and other lodging accounted for 141 establishments with employment of 2,296 employees with an annual payroll of $28,592,000. Amusement and recreation services are provided by 19 establishments with an employment of 81 persons and a payroll of $924,000. These statistics characterize one county in the Pacific Region. Blanket statements about merchants experiencing temporary monetary losses does not give adequate representation to the potential impact of an oil spill.

The National Academy of Sciences, National Research Council, Socioeconomics Panel has expressed concern to the MMS about inadequate socioeconomic information pertaining to OCS oil and gas leasing and development activities. In their report the panel concluded that significant types of social and economic impacts have been ignored in the MMS analysis. The report concluded that available data was not analyzed in a manner to assist the public and local decision makers and considerable data were outdated and unusable at the local level. Since socioeconomic issues had been the basis for considerable public opposition to OCS development, the panel recommended that socioeconomic impact studies be given a higher priority. The panel proposed four categories in which socioeconomic impacts of OCS activities should be addressed. The categories were: 1) the human environment including potential affected systems; 2) activities producing socioeconomic impacts; 3) the dimensions of the potential socioeconomic impacts; and, 4) the distribution of various impacts across human systems.

Continuing research efforts in the valuation of contingent, aesthetic, recreation and intangible resource damages, determination of public versus private socioeconomic impact damages and the development of better social and economic research techniques to actual OCS leasing and development activities is essential. This EIR falls far short of needed socioeconomic realities on the west coast.

Appendix D: Oil Spill Response Capabilities for Offshore Oil and Gas Operations

39. Page D-3. Both the MMS and the USCG should recognize and adequately define the role of local jurisdictions with respect to cleanup and response methods and operations, especially in relation to sensitive environmentally areas. The decisions made by federal agencies under the auspices of OPA 90 should not usurp state and local jurisdictions responsibilities under existing state and local legislation.

For example: Section 8670.35(d) of the State of California's Oil Pollution Legislation (SB 2040) referring to area contingency plans states as follows: "*Each contingency plan element prepared under this section shall be consistent with local government's local coastal program as certified under Section 30500 of the Public Resources Code, the state oil spill contingency plan, and the National Contingency Plan.*"

40. Page D-5. Industry OSCP's: Since it is stated that "*Procedures in OSCP's identify steps*

that will be taken to inform response personnel within the company and affected local, state, and Federal agencies." It should follow that local agencies also have review authority over such plans and not be limited by USCG and State regulatory agencies.

41. Page D-9, seventh paragraph. Local agencies must be notified in addition to all interested state and federal agencies as part of the MMS oil spill drill scenarios. Since most offshore oil spills result in significant onshore impacts to the local area, it is essential that local agencies be involved not only in notification, but the unified command as well, for all offshore oil spills which come onshore.

    Santa Barbara County is currently in the process of developing an offshore OSCP as part of a coordinating effort to address oil spill planning issues and interagency jurisdictional responsibilities. The goal of the Santa Barbara County offshore OSCP is to improve the operational utility of the unified command structure involving Federal, State, and local agency representatives that act acts in response to major oil spill events.

42 Page D-16-18, Chemical Dispersants. The decision to use chemicals or dispersants should not usurp the right for local agency input since this decision may ultimately have some effect on the local area.

43. Page D-20, Location of Equipment. Why were Marine Spill Response Corporation (MSRC) resources and capabilities excluded from this discussion? Please provide a discussion of MSRC responsibilities and capabilities.

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FIFTH DISTRICT

September 20, 1991

Minerals Management Service
381 Elden Street
Herndon, VA 22070-4817
Attention: Branch of Environmental Projects Coordination

RE: COMMENTS ON THE PROPOSED OCS NATURAL GAS
AND OIL COMPREHENSIVE PROGRAM 1992 TO 1997

Dear Project Coordinator:

The County of Santa Cruz has reviewed the Summary and Decision Document and the Draft Environmental Impact Statement (EIS) for the Proposed Outer Continental Shelf (OCS) Natural Gas and Oil Comprehensive Program 1992 to 1997, as issued by your agency. On September 17, 1991, the Santa Cruz County Board of Supervisors adopted a resolution in support of comments developed by Planning Department staff on the Proposed Program. The comments and supporting resolution are attached for your use.

Santa Cruz County has actively participated in the development of this Comprehensive Program as we have throughout the development of previous Five Year Oil and Gas Programs. We have repeatedly called for the implementation of National Energy Policies that make a firm commitment to energy conservation and renewable energy sources before additional OCS leasing occurs. To date, these policies have not reflected these concerns.

This Proposed Program does not address previous comments requesting the reduction in the size of planning areas and reduction of the number of tracts offered in each planning area. These current documents have continued to rely on generalizations applicable to broad planning areas. This practice precludes the accurate evaluation of impacts.

Extensive OCS leasing and development has already occurred off the southern California coast. Significant issues and impacts related to this previous leasing have not been resolved nor effectively mitigated. In addition, environmentally sensitive areas are not afforded any protection in the Proposed Program. These sensitive resources are further jeopardized because inadequate analyses in the Draft EIS have led to erroneous assignments of low level impacts or risks. Finally, the Draft EIS is not objective and fails to explore all reasonable alternatives.

Until the Minerals Management Service presents an OCS Oil and Gas Program that truly balances the nation's energy needs with its economic, social and environmental values, Santa Cruz County urges the deletion of all 87 tracts off California and supports the adoption of Alternative II, the no action alternative.

We thank you for your favorable consideration of our comments.

Sincerely,

FRED KEELEY, Chair
Board of Supervisors

FK:lg
Attachments

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ATTACHMENT 1

COUNTY OF SANTA CRUZ

COMMENTS ON THE PROPOSED OCS NATURAL GAS AND OIL COMPREHENSIVE PROGRAM AND DRAFT ENVIRONMENTAL IMPACT STATEMENT

INTRODUCTION

The County of Santa Cruz has reviewed both the Summary and Decision Document and the Draft Environmental Impact Statement (EIS) for the Department of Interior's (DOI) Proposed Outer Continental Shelf (OCS) Natural Gas and Oil Comprehensive Program for 1992 - 1997. The following comments are submitted as part of our continuing interest and involvement in the DOI's OCS leasing process. These comments are grouped into two categories. General comments which relate to the Proposed Program and the Draft EIS as a whole are discussed in the first section. Specific comments and questions which relate to separate subsections of the Summary and Decision Document and Draft EIS are listed in the following section. In addition, comments prepared by the Central Coast OCS Regional Studies Program/Natural Resources Defense Council, of which Santa Cruz County is a participant, are incorporated by reference.

Santa Cruz County intends to remain actively involved in the development of this OCS Natural Gas and Oil Comprehensive Program, consistent with our participation in the development of previous OCS Programs. Many of the comments and concerns previously submitted by the County have not been addressed in the documents currently under review and will therefore be repeated in the following comments. Although areas the President deferred from leasing are not included in the present planning effort, other unique and environmentally sensitive areas are still recommended for leasing in this Proposed Program. Most importantly, a commitment to energy conservation and alternative energy sources still needs to be included in national energy policies before any further OCS leasing is planned.

Extensive OCS leasing and development has already occurred off the coast of California along with related, major industrialization of onshore coastal areas. Impacts from these activities have not been absorbed nor effectively mitigated. Until the significant issues related to previous leasing and development have been resolved, Santa Cruz County will remain opposed to any further OCS leasing or development. The County of Santa Cruz urges the deletion of all tracts off California and supports the adoption of Alternative II, the no action alternative.

I. GENERAL COMMENTS

A. PROPOSED PROGRAM'S RELATIONSHIP TO NATIONAL ENERGY STRATEGY

As noted by Mineral Management Service (MMS), the National Energy Strategy (NES) was not addressed in the previously released Draft Proposed Program. In this document MMS describes how the Proposed Program is fully compatible with the NES, but does not address our concerns that the NES did not take full account of energy conservation and renewable energy sources. The Proposed Program claims the newly released NES proposes a series of actions designed to promote energy efficiency and conservation. However, since the release of the NES, the Department of Energy has been accused of failing to commit the nation to capturing all energy savings which cost less than the new supplies they would replace, particularly energy savings from increased fuel economy standards. One can assume the controversial NES will undergo major revisions by Congress before final implementation of it's recommendations. It is fiscally imprudent to develop any future OCS leasing plans until the NES commits to energy conservation and the use of alternative energy sources. Until then we cannot evaluate the need to develop OCS oil and gas resources and therefore cannot support any additional OCS development.

B. ERRORS IN THE ASSUMPTIONS USED IN THE ANALYSES

A major flaw in the Draft EIS analysis of impacts is the assumption that all oil and gas produced as a result of this Proposed Program will be transported to shore by new or expanded existing pipeline systems, except in a few instances where it is economically prohibitive. Currently, Chevron USA, Inc. and other oil companies are challenging the enforcement by Santa Barbara County of its local coastal plan's requirement that pipeline transportation be used in lieu of tankering. Although previously agreeing to the use of pipelines as a condition of development, Chevron now seeks to transport its Point Arguello oil to a refinery in El Segundo by marine tanker because it is the cheapest mode of transportation currently available. This example serves to point out the flaws in the pipeline assumption. It appears that more often than not, pipelines will be found to be economically prohibitive. As pipelines have been accepted as the most environmentally acceptable method of oil and gas transportation, we request the use of pipelines be made a mandatory requirement as a part of this Proposed Program and all future OCS development. Absent this level of

commitment to pipelines by the DOI, the entire impact analysis in the Draft EIS is deficient and should be rewritten.

Another questionable assumption in the impact analysis is that oil from the proposed action will replace an equal amount of imported oil, thereby reducing the number of import tanker trips and all environmental risks associated with the tankering of foreign oil. There is no guarantee that OCS leasing will succeed in reducing foreign oil and gas imports. Without a national commitment to energy conservation, the nation's oil and gas needs will assumably increase over time. The additional risks of major oil spills from the tankering of imported oil needs to be factored into the Draft EIS analysis of impacts.

Lastly, it is unclear whether the assumptions used for the assignment of impacts in the cumulative case considered the increase of production at onshore processing plants. This would further exacerbate impacts to onshore air quality and critically low water supplies in southern California.

C. ANALYSIS OF ENERGY ALTERNATIVES

The Council on Environmental Quality regulations implementing the National Environmental Policy Act require that agencies "rigorously explore and objectively evaluate all reasonable alternatives..." (40 CFR Section 1502.14(a)). Based on our review, the analysis of alternatives in the Draft EIS is inadequate, because it does not objectively evaluate alternative energy resources.

Scoping comments previously submitted by the County of Santa Cruz requested that alternatives that explored energy conservation and alternative energy resources be included in the EIS. In those comments we cautioned that this analysis should not be framed so that alternative energy sources must replace the entire OCS Program, as has been done in previous lease sale documents, thereby leading to a "No-Sale" alternative which is unrealistic and, therefore, rejected. But it appears that this is exactly what has happened. In the Draft EIS the only alternative to include the use of energy conservation and alternative energy sources is the "No Action" alternative. In the scenario presented, all un-met energy needs are assumed to be satisfied using foreign imports of oil and the discussion is centered on the increased environmental impacts resulting from the additional number of predicted oil spills from foreign tanker traffic.

MMS presents a new study that was contracted to analyze government imposed energy alternatives in response to comments that the government should require additional conservation and alternative energy measures. It is stated, "The analysis demonstrates that potential government actions to force energy alternatives as substitutes for OCS natural gas and oil would, in general, impose net economic costs on the Nation in addition to the foregone economic benefits of the OCS development." We were unable to substantiate the conclusions drawn by MMS because a full presentation of the economic analyses of the costs and benefits of pursuing various alternative energy strategies over those of developing the nation's OCS was not included in the Draft EIS. We were unable to secure and review a copy of the economic analyses in time to make the deadline for submission of comments.

The only actual documentation on alternative energy strategies presented in the Draft EIS (Appendix C) were the results of an assessment of the environmental impacts associated with energy alternatives. This part of the above mentioned broader study was a comparative, qualitative analysis of the environmental impacts of energy alternatives and OCS oil and gas production. It is little more than a checklist of environmental impacts associated with the various energy alternatives. However, it was interesting to note that this assessment concludes, "gas and oil conservation are clearly more beneficial than any of the other alternatives explored". It is our opinion that the Draft EIS fails to properly address our previous comments that the government require additional conservation and alternative energy measures as a part of the Proposed Program.

D. SIZE AND TIMING OF LEASE SALES

The County of Santa Cruz has, in the past, requested the DOI to evaluate the reduction in the size of planning areas. We also requested a reduction in the number and size of sales held in each planning area. Other than a brief statement dismissing comments pertaining to excluding portions of the Southern California Planning Area, these comments were not addressed in the Draft EIS. We do acknowledge that the DOI explored the possibility of reducing the number of lease sales in certain planning areas (Alternative III) in response to requests to slow the pace of leasing. But are concerned that MMS chose to not address our comments.

A reduction in the size of planning areas would result in the development of more detailed information for each area and lead to a more site specific impact analysis. These current documents have continued to rely on generalizations applicable to broad planning areas. A closer focus could provide information useful in the cumulative impact analysis of the Proposed Program and subsequent lease sale environmental documents and thereby provide essential planning and mitigation information for local government's use in assessing onshore impacts.

The DOI should adopt a new planning approach that takes into account the location of a geologically defined basin, the area that can be affected by development of that basin and the adequacy of existing infrastructure which would serve that development. In the Proposed Program this approach would better serve the Southern California Planning Area, as the Santa Maria Basin is very much different than the Santa Barbara Channel area. These differences include oceanographic conditions, types of oil produced and the amount of existing infrastructure.

The timing of lease sales should be slowed and the number of tracts offered in each sale reduced. It would be more appropriate to base the timing of sales on the ability of specific offshore and onshore areas to absorb

impacts rather than an arbitrary assignment of a fixed number of years or tracts. The timing of lease sales within a planning area should allow sufficient time after initial development and production for the generation and evaluation of new information on environmental or socioeconomic damage and related cumulative impacts.

Currently 88 of the 105 active leases in the Southern California Planning Area remain undeveloped. This is not discussed in the Draft EIS and it remains unclear whether the major regional impacts that will result from their development are considered in the assignment of cumulative impacts. Why haven't these 88 tracts been developed? Why offer new tracts adjacent to leased, but undeveloped tracts? No additional leasing should occur in the Southern California Planning Area until these 88 tracts have been developed or abandoned.

The DOI should implement a policy requiring phasing of future leasing in areas already heavily leased, so that the effects of development already approved can be absorbed and evaluated before more activity begins. This further supports our recommendation to delete all proposed 87 tracts in the Southern California Planning Area from the Proposed Program.

E. OIL SPILL RESPONSE SHORTFALLS

Appendix D of the Draft EIS describes the current capabilities of the oil industry to respond to potential spills related to leasing in the OCS. The discussion of the location of oil spill containment and cleanup equipment serves well to highlight just how inadequate oil spill response is in the Pacific Region.

Currently, there are no commercial ocean salvage vessels along the central and northern California coast dedicated to oil spill response and cleanup. San Francisco Bay has only one dedicated offshore skimming system and there is no offshore skimming capability in northern California. While there are industry-sponsored cleanup cooperatives in Humboldt Bay, San Francisco Bay, and Southern California, there is no formal mutual aid agreement in place linking the cooperatives along the coast.

A major segment of the central California coast from San Francisco Bay to Point Conception is void of any oil spill response capability. Yet the risk from existing marine vessel traffic along the central California coast is unacceptably high. The need for dedicated response vessels and offshore skimmers stationed along the central California coast is acute. Without this equipment, any response time would be so long as to preclude any reasonable effort of at-sea containment and cleanup.

As evidenced by the Draft EIS, the threat of major offshore oil spills from tanker traffic along the Pacific coast is very real. Oil spill containment and cleanup technology needs to be improved and made available before any further OCS leasing is proposed.

F. ENVIRONMENTALLY SENSITIVE AREAS

The Proposed program continues to call for the leasing of a number of environmentally sensitive areas off California. Proposed tracts in the Southern California Planning Area off the San Luis Obispo and Santa Barbara County coastlines threaten important sea otter habitat, the Channel Islands National Marine Sanctuary, cetacean migration lanes and waters proposed for inclusion in the Monterey Bay and Morro Bay National Marine Sanctuaries. Current development of leases previously granted within the Santa Barbara and Santa Maria basins already make this planning area one of the nation's major OCS oil producers. As previously stated, 88 of the existing 105 active leases have not been developed. DOI should wait until these leases are developed and their cumulative impacts studied before offering any new tracts in the Southern California Planning Area.

G. IMPACTS TO COMMERCIAL FISHERIES AND FISH RESOURCES

Based on the assumptions of the various scenarios presented, including the "cumulative case", impacts to commercial fisheries due to routine activities and small oil spills are described as "inconveniences" during the 35-year life of the program with little or no discernible economic loss. In the "base case" one or more oil spills are expected to result in large economic losses to the commercial fisheries, ranging from 20 to 30 percent and lasting for two seasons. The "cumulative case" concludes that impacts from the 17 assumed spills will not be discernible from normal fluctuations of commercial fisheries within the Pacific Region overall. We question these assigned levels of impacts and suggest that the Draft EIS does not accurately analyze and assign risks to the commercial fisheries. The estimates for population recovery rates for fish and shellfish resources from the impacts resulting from the Proposed Program are optimistically short periods and are not supported by any documentation.

The Fishermen's Contingency Fund is mentioned repeatedly in the Draft EIS as a source to mitigate economic losses incurred by fishermen as a result of routine development activities or accidental spills. This assumption may partially explain the erroneously low level of impacts to commercial fisheries. This fund does not mitigate commercial fishermen for damage to habitat or loss of fishery resources (available catch). The fund was set up to reimburse commercial fishermen for damage to gear caused by seafloor obstructions related to oil and gas development in the OCS. It has also been documented that fishermen experience a 6 to 9 month turn around time for claims. The seasonal nature of fisheries doesn't allow fishermen to wait for the Federal Contingency Fund to cover losses. This time lag has caused considerable financial burdens on these fishermen. In fact, Santa Barbara County has found it necessary to activate a local fishermen's contingency fund to assist local fishermen while they waited for payment on the Federal Contingency claims. This clarification serves to illustrate how limited the Federal Contingency Fund is as a mitigation measure.

The authors of a study done for Santa Barbara County found that the majority of fishermen considered the impacts from oil development to be large or moderate (Kronman and Cicin-Sain, 1987). The study found that fishermen had experienced major personal impacts including preclusion from fishing grounds, interference with support vessels and equipment, competition for dock or pier space, decreased fish catch; increased costs and travel time to fishing grounds, and snags from seafloor debris or anchor scars. Fishermen in Santa Barbara County are experiencing cumulative impacts from OCS development and they do not label these impacts as "inconveniences".

Seismic exploration operations are also identified as causing impacts to commercial fishermen. Several studies on seismic effects on fish behavior have been conducted. The study by Pearson, et al., (1987) looked at the reaction of rockfish to seismic acoustic energy and showed that the fish exhibited behavior changes and the catch-per-unit-effort declined 52.4%. This study raised other issues which will have to be addressed in the future.

Fishermen are also concerned with the effect of seismic acoustic signals on the long-term productivity of fish and shellfish resources. The discussion in the Draft EIS on impacts associated with noise did not adequately address this issue. Recent airgun studies conducted in the Pacific Region were not included in the discussion. Holliday, et al., (1987) examined the effect of airgun releases on Northern anchovy (Engraulis mordax) eggs, larvae and adults. They found indications that subtle effects on survival are experienced by the earliest stages tested. The data suggest that the yolk sac larvae are the most sensitive of the life stages tested. Statistically significant differences were noted in the short-term survival at the two highest energy exposures for two day old yolk sac larvae.

In another study, Pearson, et al., (1988) investigated the effects of airguns on Dungeness crab (Cancer magister) larvae. Although this study found no effects on the zoeae stage (the megalopae stage was not tested), many other issues were raised which warrant further studies.

The California commercial fishing industry consists, for the most part, of individually owned family businesses. These small operations are predicated upon renewable seasonal fish resources and are not able to sustain losses which are over several years in duration, such as those losses classified as "inconveniences" in this Draft EIS. These factors should be considered when evaluating impacts to the fisheries economy.

CONCLUSION

Until a national energy policy is adopted which places the highest priority on federal actions to reduce the demand for oil and gas consumption through a commitment to energy conservation and the use of renewable alternative sources, we cannot evaluate the need to develop OCS oil and gas resources. Our comments on the Proposed Program and Draft EIS highlight the need to resolve the significant issues and impacts related to previous OCS leasing and development.

As indicated in these comments the Draft EIS on the Proposed Program is deficient in numerous ways. To allow full analysis of project alternatives, and a complete disclosure of potential project impacts, the Draft EIS should be revised and reissued for comment.

Santa Cruz County urges the deletion of all tracts off California and supports the adoption of Alternative II No-Action, which would result in no new OCS leasing for this five year period.

II. SPECIFIC COMMENTS ON THE SUMMARY AND DECISION DOCUMENT AND DRAFT ENVIRONMENTAL IMPACT STATEMENT

The comments listed below are in response to questions or concerns relating to specific subsections of the Summary and Decision Document and the Draft Environmental Impact Statement (Draft EIS). The page numbers preceding each comment refer to the pages in the document to which the comment is directed.

A. Summary and Decision Document

Page 45, Program Alternatives for the Draft EIS. Alternatives 3 and 4 as listed in the Summary and Decision Document are different than those listed in the Draft EIS. Apparently the descriptions of these alternatives have been transposed in the Summary and Decision Document. We are concerned that the confusion caused by this mistake could have some serious effects. A majority of commenters will only have access to the Summary and Decision Document and will therefore base their comments on this erroneous listing of alternatives. For example, commenters expressing support for Alternative 3 to exclude certain planning areas, such as the Southern California Planning Area, from the proposed leasing schedule would actually be supporting Alternative 4, which results in no change to the Southern California Planning Area.

B. Draft Environmental Impact Statement

Page ii, Executive Summary, Risks of Accidental Oil Spills, paragraph 1. The document states, "No substantive environmental impacts have been observed as a result of OCS-related oil spills for more than 20 years." We assume that this refers to platform accidents such as well-blowouts. It is misleading to make this statement without defining "OCS-related" oil spills.

Page I-10, Plankton. The decision by MMS to not address the issue of impacts on plankton in a discrete section of the EIS severely limits the scope of the analysis used to assign impacts in the Draft EIS. It is not appropriate to evaluate the impacts on plankton as part of the analysis for larger organisms that use plankton as food (e.g., some baleen whales), or as part of the analysis for organisms (e.g., some fishes) that may be planktonic during some portion of their life cycle. The premise that this approach would focus the analysis on those parts of the plankton community that are most important to society or are most likely to sustain significant impacts from OCS activities is too simplistic. Plankton, as the basis of the food chain can not be isolated as proposed.

Page I-12, Exclude Portions of Southern California. The analysis of excluding the entire 87 blocks proposed in the Southern California Planning Area was presented as part of Alternative IV, not Alternative V as stated here.

Page III-119, Sea Otter (Pacific Population), paragraph 3. The California sea otter population was listed as threatened under the Endangered Species Act of 1973, not the Marine Mammal Protection Act.

Page III-119, Sea Otter (Pacific Population), Paragraph 3. It is misleading to quote the population figures for the Enhydra species' total population ranging from Russian and Alaskan waters south to California in a paragraph describing sea otter distribution in Washington and California.

Page III-120, Sea Otter (Pacific Population), paragraph 6. This discussion of the translocation of California sea otters to San Nicholas Island should mention that this experimental program was recently deemed unsuccessful by the California Department of Fish and Game Commission. This led to their decision to deny FWS's request for a permit to continue the sea otter translocation program.

Page III-140, Coastal Habitats - Wetlands and Estuaries, paragraph 2. Add Elkhorn Slough to the list of important central California estuaries.

Page III-148, Proposed National Marine Sanctuaries, paragraph 2. The statement that the proposed Monterey Bay National Marine Sanctuary is located off the central California coast near the City of Monterey is in error. The proposed Sanctuary includes coastline off the Counties of Santa Cruz, San Mateo and Monterey. Included are the Cities of Santa Cruz, Capitola, Marina, Seaside, Pacific Grove, as well as Monterey.

Page III-149, Areas of Special Biological Concern, paragraph 2. If any of the enumerated California ecological reserves, wildlife refuges, or ASBS occur in the Southern California Planning area which is slated for development in this Proposed Program, they should be identified by name in this section.

Page III-153, Commercial Fisheries, paragraph 1. Add the commercial herring and herring roe-on-kelp fishery in the San Francisco and Tomales Bays to the list of important fisheries in central California.

Page III-153, Commercial Fisheries, paragraph 3. Add abalone to mariculture activities for central California.

Page III-154, Commercial Fisheries, paragraph 1. The $52 million dollar value of central California commercial fish is ex-vessel value and should be specified as such.

Page III-154, Commercial Fisheries, paragraph 3. Correct the last statement. Mackerel, anchovy, sardines and squid are caught using lampara or purse seine gear not by trolling.

Page III-155, Recreational Fisheries, paragraph 5. The citation of Smith and Kato, 1979 is not in the list of references (Chapter VI).

Page IV.A-41, Impacts Associated with Noise - Fish Resources. This discussion does not include any reference to the more recent airgun studies conducted in California. Pearson, et al., (1987), investigated the effects of seismic acoustic energy on fish behavior. Holliday, et al., (1987), and Pearson, et al., (1988), investigated the effects of seismic acoustic energy on certain life stages of Northern anchovy and Dungeness crab, respectively.

Page IV.A-41, Impacts Associated with Noise - Fish Resources. The cited study by Kostyuchenko (1973) was not in the list of references (Chapter VI).

Page IV.A-42, Accidental Events - Oil Spills, paragraph 1. Again, the document states, "...no substantive impacts from OCS-related oil spills have been observed for more than 20 years." It is misleading to make this statement without defining "OCS-related" oil spills.

Page IV.D-86, Base Case Impacts - Sea Otters (Pacific Population), paragraph 1. The California sea otter population was listed as threatened under the Endangered Species Act of 1973, not the Marine Mammal Protection Act.

Page IV.D-88, Base Case Impacts - Sea Otters (Pacific Population), paragraph 1. It is stated that 350 sea otters oiled in the 1989 Alaskan spill were captured and taken to treatment centers. How many of these survived and were released? How much did this rescue and rehabilitation program cost?

RESOURCE MANAGEMENT AGENCY
county of ventura

THOMAS BERG
Agency Director

October 29, 1991

S. Scott Sewell, Director
Minerals Management Service
Program Development Office, Room 2525
1849 C Street, N.W.
Washington, D.C. 20240

SUBJECT: County of Ventura Comments on Proposed Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Comprehensive Program 1992-1997 and Draft Environmental Impact Statement (DEIS)

Dear Mr. Sewell:

The purpose of this letter is to submit the County of Ventura's response to the Minerals Management Service (MMS) request for comments on the Proposed Comprehensive OCS Five-Year Program 1992-1997, and the Draft Environmental Impact Statement (DEIS), released in August 1991.

In April 23, 1991, the County submitted extensive comments on the Draft Proposed Five-Year Program to your predecessor, Barry Williamson. However, it appears that none of our comments, or comments made by other California jurisdictions, have been incorporated in the Proposed Five-Year Program.

Although County officials have stated our concerns on previous occasions that Ventura County not bear a disproportionate burden resulting from offshore oil and gas activity, we generally support reasonable and responsible OCS development if it is conducted in an environmentally sensitive manner. Unfortunately, in some cases, the offshore leasing and development process has focused too much on short-term revenue considerations and regional and national energy markets and has ignored the concerns of local governments that must bear the major negative impacts that are associated with OCS leasing/exploration/development activities.

Given this introduction, the County of Ventura requests that the following environmental, economic, social and fiscal issues be considered and that corresponding mitigation measures/policy changes be incorporated into this Five-Year Program that would address these concerns.

1992-1997 LEASE SALE PROGRAM FOR THE PACIFIC OCS REGION

Recommendation - The County of Ventura recommends that action on the 87 proposed tracts in the Santa Barbara Channel/Santa Maria Basin be deferred until these tracts' relationship to long-term phasing of offshore oil development has been explicitly addressed, and the need for these additional tracts has been addressed in terms of consistency with the National Energy Strategy (see next section).

Discussion - It is our understanding that the Santa Barbara Channel/Santa Maria Basin currently includes 105 active OCS leases. However, over 80 of these leases remain undeveloped or inactive and these existing leases could contribute to negative environmental, infrastructure, socioeconomic and fiscal offshore and onshore impacts on the County. Until these potential impacts have been adequately documented and mitigated, it does not seem prudent to offer for lease

Government Center, Hall of Administration Building
800 South Victoria Avenue, Ventura, CA 93009 (805) 654-2661

additional tracts which could further complicate local government's ability to accommodate resulting negative impacts. Also, the need for additional tracts, and their consistency with the National Energy Strategy should be addressed prior to any lease sale action in 1996.

NATIONAL ENERGY STRATEGY/FUTURE OFFSHORE LEASING

Recommendation - The Federal Government's National Energy Strategy should be revised so as to emphasize energy conservation as well as additional domestic production.

Discussion - Because California is a net importer of oil and gas, other energy resources are needed to meet the State's future energy needs. The current National Energy Strategy focuses on increasing domestic production and provides relatively little incentive to identifying and developing energy conservation programs and measures. Until MMS's leasing (and post lease) decisions are coordinated with a national energy policy, the management and sale of a non-renewable resource (such as oil) will continue to focus on short-term revenue sources. Seemingly little consideration is given to the conservation of energy resources which could provide a balanced approach to long term energy self sufficiency. This issue reflects on the relative need for the 87 proposed tracts.

LONG TERM PHASING OF OCS ACTIVITY

Recommendation - The MMS, working in cooperation with the State of California and locally impacted governments, should develop a long term phasing plan for the future leasing/development of the Santa Barbara Channel/Santa Maria Basin OCS and Tidelands areas and the remainder of the Pacific OCS Region. This phasing plan should explicitly address the role of both the existing undeveloped or inactive leases and the 87 proposed tracts.

Discussion - As we noted in our April 23rd response, accelerated Federal leasing programs, together with the lack of a Federal and State policy that governs the *pace* of future offshore activity, has placed additional burdens on local government infrastructure, contributed to an incremental degradation of the County's air quality and has generally not provided opportunities for adequate local review of leasing programs and "post lease" decisions. Consequently, local governments must accommodate the various socioeconomic, environmental and fiscal impacts from the lease sale process, to the extent feasible, and the MMS (until recently) made most of the OCS development decisions unilaterally with limited opportunity for meaningful local input. Recent changes in MMS policy have provided a much appreciated opportunity for involving local governments in a meaningful consultative process. Several successful meetings between Pacific OCS Region staff and officials representing the "Tri-County" governments of the South/Central California coast have already occurred. The County of Ventura supports these latter efforts by the MMS and encourages further contacts for purposes of formulating a phasing strategy for the entire Pacific OCS region that would be responsive to local government concerns while achieving national energy objectives.

AIR QUALITY

Recommendation - The MMS should ensure that air quality impacts and mitigation requirements are evaluated and considered early in the leasing/development process.

Discussion - Ventura County has a serious air quality problem. The County will be designated either a "severe" or "extreme" ozone nonattainment area under the 1990 Federal Clean Air Act Amendments. Depending on the designation, the County

will have until the year 2005 or 2010 to attain the Federal ozone standard. Although Ventura County has made considerable progress in reducing emissions and improving air quality in recent years, large emission reductions must still be achieved to meet air quality standards.

Under the 1990 Federal Clean Air Act Amendments, jurisdiction and enforcement of air quality standards for oil and gas operations in Federal waters offshore California passed from the MMS to the Environmental Protection Agency (EPA). It is expected that local air pollution control districts will be delegated authority by EPA to regulate air emissions from OCS oil and gas development projects. It will be important for the MMS to work cooperatively with local air districts, the State Air Resources Board and EPA to ensure that all new air quality regulations are considered early in the leasing/development process.

CUMULATIVE ONSHORE INFRASTRUCTURE/SOCIOECONOMIC IMPACTS

Recommendation - Appropriate stipulations should be incorporated into all MMS lease sales and post-lease plans and permits including Exploration Plans (EP's) and Development and Production Plans (DPP's) that would ensure that the cumulative negative impacts from offshore development and attendant onshore support activity, would be fully documented and mitigated.

Discussion - A recent "cumulative offshore projects list", developed by the tri-county governments, indicates there are currently five platforms in State (tidelands) waters and eighteen platforms in Federal (OCS) waters offshore Ventura, Santa Barbara and San Luis Obispo Counties. The DEIS developed for this current five year lease program indicates that under *base* and *worse case* scenarios, that seven or twelve new platforms will be developed in the Channel/Basin over the next 15 years (within the 87 tracts being offered for lease), and that no new processing facility/ onshore pipelines will be needed to accommodate the additional activity. This assumption is highly speculative because it assumes a new processing facility and needed pipelines will be constructed in North Santa Barbara County/Southern San Luis Obispo County that will accommodate production from *existing leases* in the Santa Maria Basin.

It is our County's position that all negative impacts, resulting from additional offshore projects, should be fully mitigated by the oil industry. Currently, the Tri-County Socioeconomic Monitoring and Mitigation Program (SEMP) is the only regional program that monitors and mitigates negative impacts stemming from offshore projects. However, SEMP derives its authority from the permit conditions of local jurisdictions that govern onshore support facilities. Thus, the implementation of SEMP may not be consistently applied to all offshore projects if the project's onshore component does not require any modification to existing local permits or if additional onshore components are not forthcoming. This latter case could apply if it is assumed that no additional onshore facilities will be needed to accommodate the offshore activity produced by this 5 year lease program. The incorporation of impact mitigation stipulations in Federal leases would ensure that impacts on local infrastructure, public services, housing and finances are minimized or negated in a responsible manner.

OIL SPILL CONCERNS/PIPELINE TRANSPORT ISSUES

Recommendation - The pipeline transport of oil should be required through stipulations in this five year program and in any subsequent lease sales/development activity. Federal, State and local governments should also develop a comprehensive plan/program for efficiently and safely transporting oil from its source to eventual markets that minimizes impacts on local infrastructure and services.

Discussion - Because the Tri-County "cumulative project list", and information from other sources, indicates there is the potential for numerous additional offshore platforms in the Channel/Basin within the next 15 to 20 years, the possibility increases proportionately that a collision could occur involving ship traffic and a platform. The County of Ventura continues to support efforts to reduce the number of interstate (and intra-state) oil tanker trips along the Pacific Coast, together with a platform decommissioning program that would eliminate outmoded or marginally producing platforms, as an important means to minimize oil spills. Because oil spill cleanup technology and procedures are evolving, largely through trial and error techniques, it is apparent that oil spill prevention is of paramount importance. One way to accomplish this important objective is to prohibit any tankering or barge transport of petroleum resources after the completion of an adequate onshore pipeline system.

Also, this lease sale program does not provide any "master plan" for a safe, cost-effective and environmentally sensitive onshore pipeline transport system that would carry the crude oil from its source to refineries and retail markets. Until such a commitment/plan is forthcoming, oil transportation decisions will continue to be made on a piecemeal basis with the possibility that transport systems may have gaps or may be redundant. For example, oil produced from the Pt. Arguello and Santa Ynez Unit projects in the Channel/Basin was earmarked for transport via the All-American Pipeline system (Gaviota to Kern County and on to refineries/markets in Los Angeles and Texas). This existing transport system was subsequently rejected by the major producers representing these projects because of various cost/technical factors. Currently, the $120 million All American Pipeline "Gaviota to Kern County segment" is underutilized and the producers are apparently supporting an application to build another major pipeline from Gaviota to Los Angeles. A well designed, comprehensive pipeline system, that is the product of coordination efforts by Federal, State and local jurisdictions and the oil industry, would minimize the disruptive impacts of a costly oil transport impasse which has affected the Pt. Arguello project and the tri-counties.

MITIGATION OF COASTAL COUNTY AND CITY IMPACTS/LEGISLATIVE INITIATIVES

Recommendation - The current system for distributing OCS revenues attributed to leasing, exploration and production should be revised. Negatively impacted coastal counties and cities should be fully reimbursed for all direct and indirect costs associated with offshore development.

Discussion - The MMS has indicated in prior news releases that it has prepared a legislative initiative to provide coastal communities that experience negative OCS impacts with a share of the benefits from any new development projects. The County of Ventura supports this objective and urges the passage of Federal and State legislation that would utilize revenues from OCS projects to fund infrastructure, environmental and natural resource projects for coastal governments. It is our recommendation that legislation should be based on the following criteria:

1. Funding should be directly allocated to local coastal governments that are negatively impacted by OCS projects.

2. Funding should be distributed based on an "impact formula" that takes into account such variables as existing and projected offshore leases adjacent to the coastal jurisdiction, the existing and projected quantity of oil and gas to be landed in the coastal jurisdiction, and the existing and anticipated indirect impact on air quality, increased demand on the onshore infrastructure and other factors such as increased impacts on port activities.

However, any Federal or State "revenue sharing" funds would not be acceptable if the lease program or production plan exposed the County to unacceptable environmental/fiscal risks. Any revenue sharing plan should clearly be an adjunct to a sensitive, well designed leasing/development program that minimizes environmental/ fiscal hazards at the outset.

SUMMARY

The County of Ventura continues to support the responsible development of OCS hydrocarbon resources in order to help assure national security and reduce dependence on foreign oil sources. However, this support is contingent on pursuing a national energy policy that balances energy production with aggressive conservation measures and renewable energy resource development. This latest five year lease sale program should be amended so as to be consistent with a revised National Energy Strategy that emphasizes the above objectives. The MMS should also develop long range plans and programs for leasing and production activities which would include appropriate phasing techniques designed to minimize the negative impacts on local government's infrastructure, air quality, public services, housing and finances, and document the necessity for making additional leases available after 1996.

Thank you for the opportunity to comment on the Proposed Five Year Program.

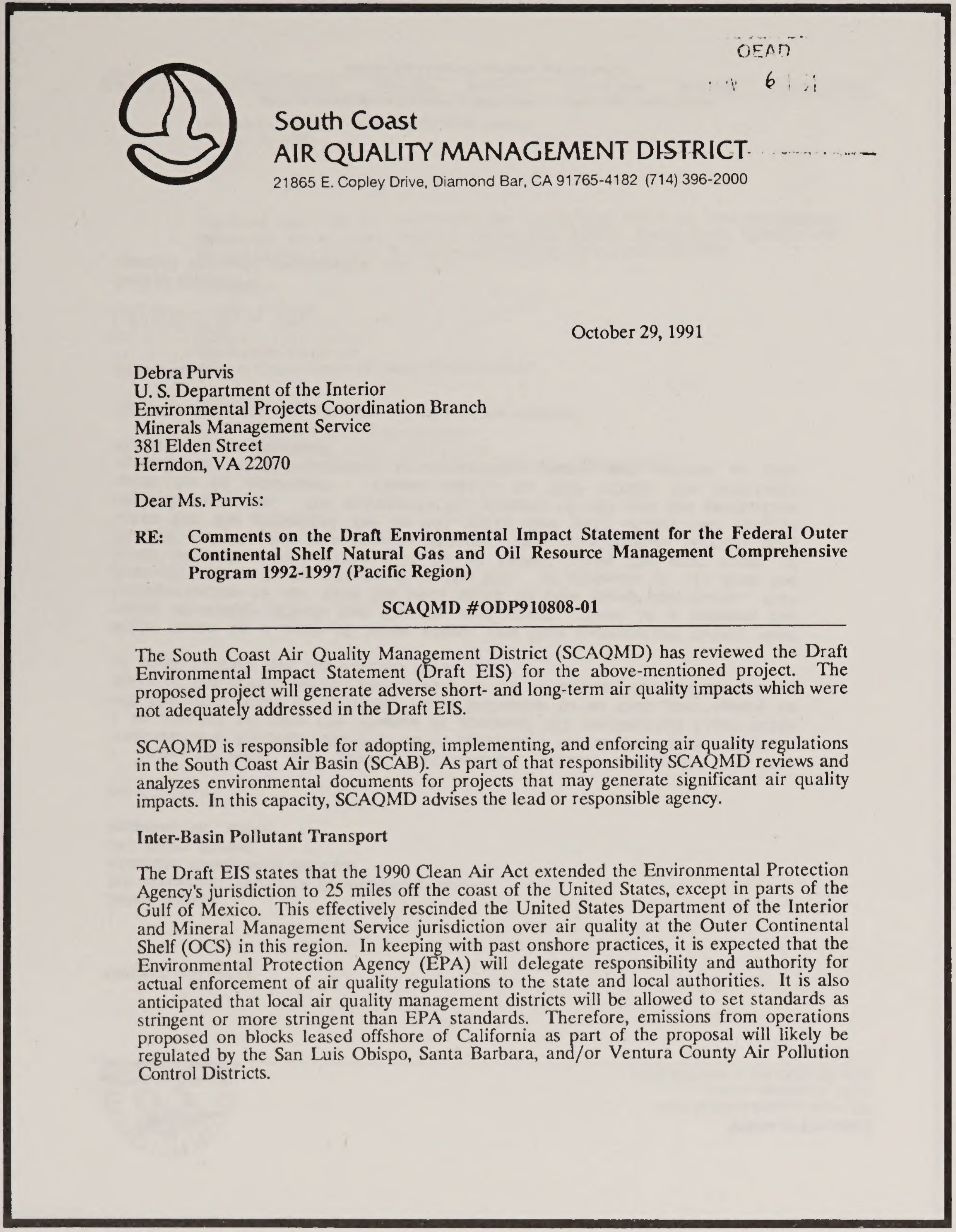
Sincerely,

RESOURCE MANAGEMENT AGENCY

Thomas Berg, Director

TB:nf/1J191-0.91

cc: Ventura County Board of Supervisors
Richard Wittenberg, CAO
Lisle Reed, MMS Pacific OCS Regional Office
James Strock, Secretary of Environmental Protection
County of Santa Barbara
County of San Luis Obispo
City of Ventura
City of Oxnard
City of Port Hueneme



OEAD
6

South Coast
AIR QUALITY MANAGEMENT DISTRICT
21865 E. Copley Drive, Diamond Bar, CA 91765-4182 (714) 396-2000

October 29, 1991

Debra Purvis
U. S. Department of the Interior
Environmental Projects Coordination Branch
Minerals Management Service
381 Elden Street
Herndon, VA 22070

Dear Ms. Purvis:

RE: Comments on the Draft Environmental Impact Statement for the Federal Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program 1992-1997 (Pacific Region)

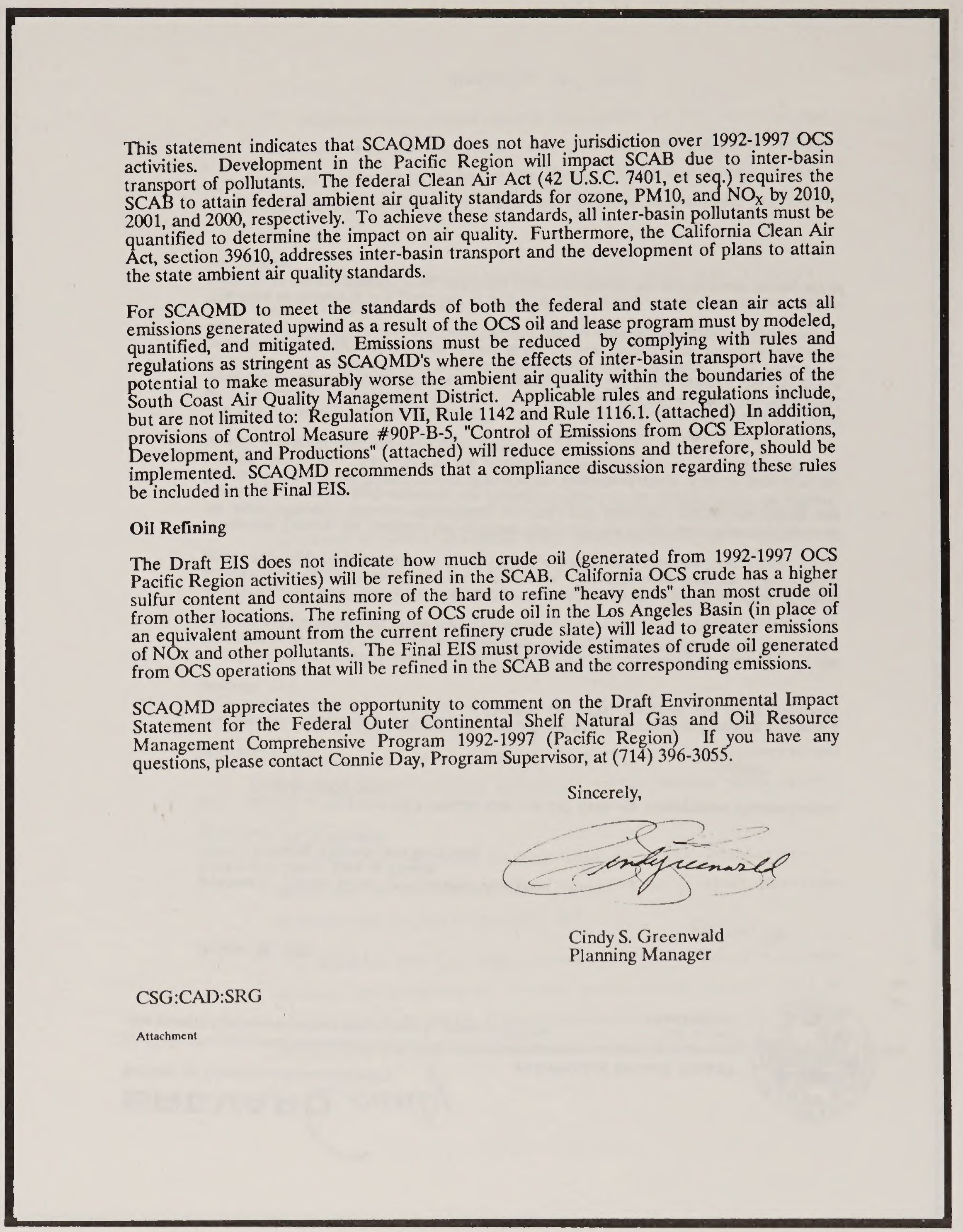
SCAQMD #ODP910808-01

The South Coast Air Quality Management District (SCAQMD) has reviewed the Draft Environmental Impact Statement (Draft EIS) for the above-mentioned project. The proposed project will generate adverse short- and long-term air quality impacts which were not adequately addressed in the Draft EIS.

SCAQMD is responsible for adopting, implementing, and enforcing air quality regulations in the South Coast Air Basin (SCAB). As part of that responsibility SCAQMD reviews and analyzes environmental documents for projects that may generate significant air quality impacts. In this capacity, SCAQMD advises the lead or responsible agency.

Inter-Basin Pollutant Transport

The Draft EIS states that the 1990 Clean Air Act extended the Environmental Protection Agency's jurisdiction to 25 miles off the coast of the United States, except in parts of the Gulf of Mexico. This effectively rescinded the United States Department of the Interior and Mineral Management Service jurisdiction over air quality at the Outer Continental Shelf (OCS) in this region. In keeping with past onshore practices, it is expected that the Environmental Protection Agency (EPA) will delegate responsibility and authority for actual enforcement of air quality regulations to the state and local authorities. It is also anticipated that local air quality management districts will be allowed to set standards as stringent or more stringent than EPA standards. Therefore, emissions from operations proposed on blocks leased offshore of California as part of the proposal will likely be regulated by the San Luis Obispo, Santa Barbara, and/or Ventura County Air Pollution Control Districts.



This statement indicates that SCAQMD does not have jurisdiction over 1992-1997 OCS activities. Development in the Pacific Region will impact SCAB due to inter-basin transport of pollutants. The federal Clean Air Act (42 U.S.C. 7401, et seq.) requires the SCAB to attain federal ambient air quality standards for ozone, PM10, and NO_x by 2010, 2001, and 2000, respectively. To achieve these standards, all inter-basin pollutants must be quantified to determine the impact on air quality. Furthermore, the California Clean Air Act, section 39610, addresses inter-basin transport and the development of plans to attain the state ambient air quality standards.

For SCAQMD to meet the standards of both the federal and state clean air acts all emissions generated upwind as a result of the OCS oil and lease program must by modeled, quantified, and mitigated. Emissions must be reduced by complying with rules and regulations as stringent as SCAQMD's where the effects of inter-basin transport have the potential to make measurably worse the ambient air quality within the boundaries of the South Coast Air Quality Management District. Applicable rules and regulations include, but are not limited to: Regulation VII, Rule 1142 and Rule 1116.1. (attached) In addition, provisions of Control Measure #90P-B-5, "Control of Emissions from OCS Explorations, Development, and Productions" (attached) will reduce emissions and therefore, should be implemented. SCAQMD recommends that a compliance discussion regarding these rules be included in the Final EIS.

Oil Refining

The Draft EIS does not indicate how much crude oil (generated from 1992-1997 OCS Pacific Region activities) will be refined in the SCAB. California OCS crude has a higher sulfur content and contains more of the hard to refine "heavy ends" than most crude oil from other locations. The refining of OCS crude oil in the Los Angeles Basin (in place of an equivalent amount from the current refinery crude slate) will lead to greater emissions of NOx and other pollutants. The Final EIS must provide estimates of crude oil generated from OCS operations that will be refined in the SCAB and the corresponding emissions.

SCAQMD appreciates the opportunity to comment on the Draft Environmental Impact Statement for the Federal Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program 1992-1997 (Pacific Region) If you have any questions, please contact Connie Day, Program Supervisor, at (714) 396-3055.

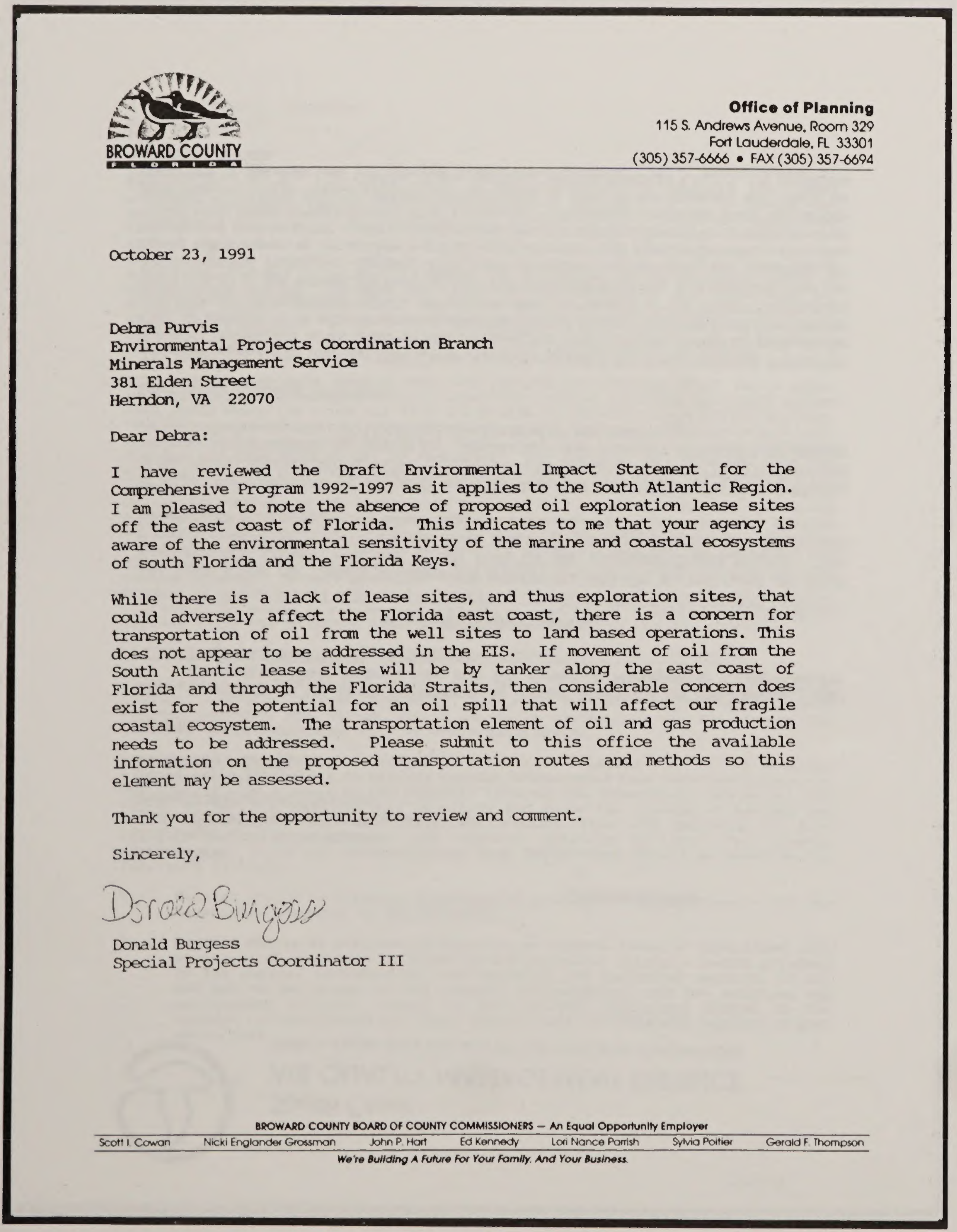
Sincerely,

Cindy Greenwald

Cindy S. Greenwald
Planning Manager

CSG:CAD:SRG

Attachment



BROWARD COUNTY
FLORIDA

Office of Planning
115 S. Andrews Avenue, Room 329
Fort Lauderdale, FL 33301
(305) 357-6666 • FAX (305) 357-6694

October 23, 1991

Debra Purvis
Environmental Projects Coordination Branch
Minerals Management Service
381 Elden Street
Herndon, VA 22070

Dear Debra:

I have reviewed the Draft Environmental Impact Statement for the Comprehensive Program 1992-1997 as it applies to the South Atlantic Region. I am pleased to note the absence of proposed oil exploration lease sites off the east coast of Florida. This indicates to me that your agency is aware of the environmental sensitivity of the marine and coastal ecosystems of south Florida and the Florida Keys.

While there is a lack of lease sites, and thus exploration sites, that could adversely affect the Florida east coast, there is a concern for transportation of oil from the well sites to land based operations. This does not appear to be addressed in the EIS. If movement of oil from the South Atlantic lease sites will be by tanker along the east coast of Florida and through the Florida Straits, then considerable concern does exist for the potential for an oil spill that will affect our fragile coastal ecosystem. The transportation element of oil and gas production needs to be addressed. Please submit to this office the available information on the proposed transportation routes and methods so this element may be assessed.

Thank you for the opportunity to review and comment.

Sincerely,

Donald Burgess

Donald Burgess
Special Projects Coordinator III

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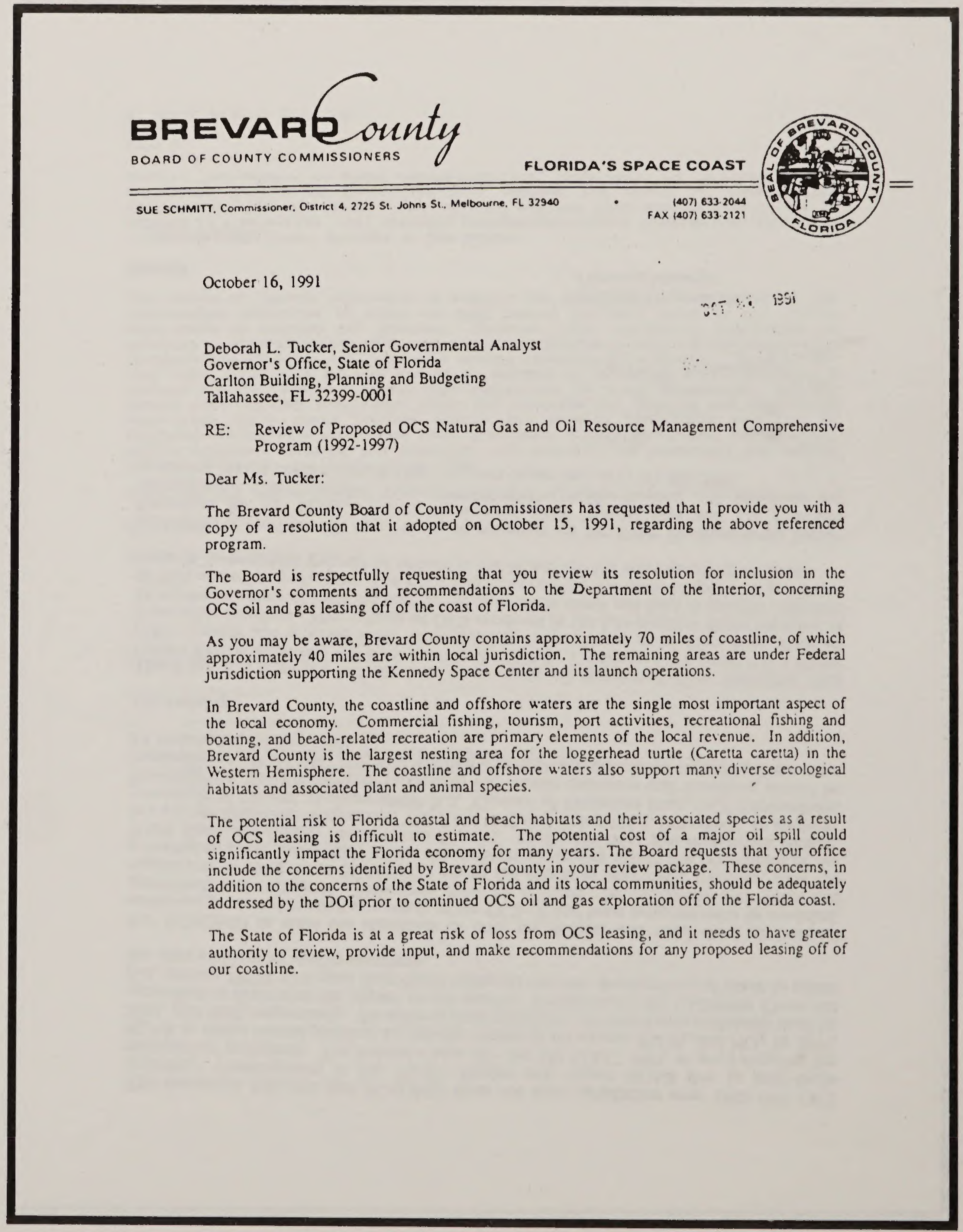


BREVARD County
BOARD OF COUNTY COMMISSIONERS
FLORIDA'S SPACE COAST

SUE SCHMITT, Commissioner, District 4, 2725 St. Johns St., Melbourne, FL 32940 • (407) 633-2044
FAX (407) 633-2121

October 16, 1991

OCT [illegible] 1991

Deborah L. Tucker, Senior Governmental Analyst
Governor's Office, State of Florida
Carlton Building, Planning and Budgeting
Tallahassee, FL 32399-0001

RE: Review of Proposed OCS Natural Gas and Oil Resource Management Comprehensive Program (1992-1997)

Dear Ms. Tucker:

The Brevard County Board of County Commissioners has requested that I provide you with a copy of a resolution that it adopted on October 15, 1991, regarding the above referenced program.

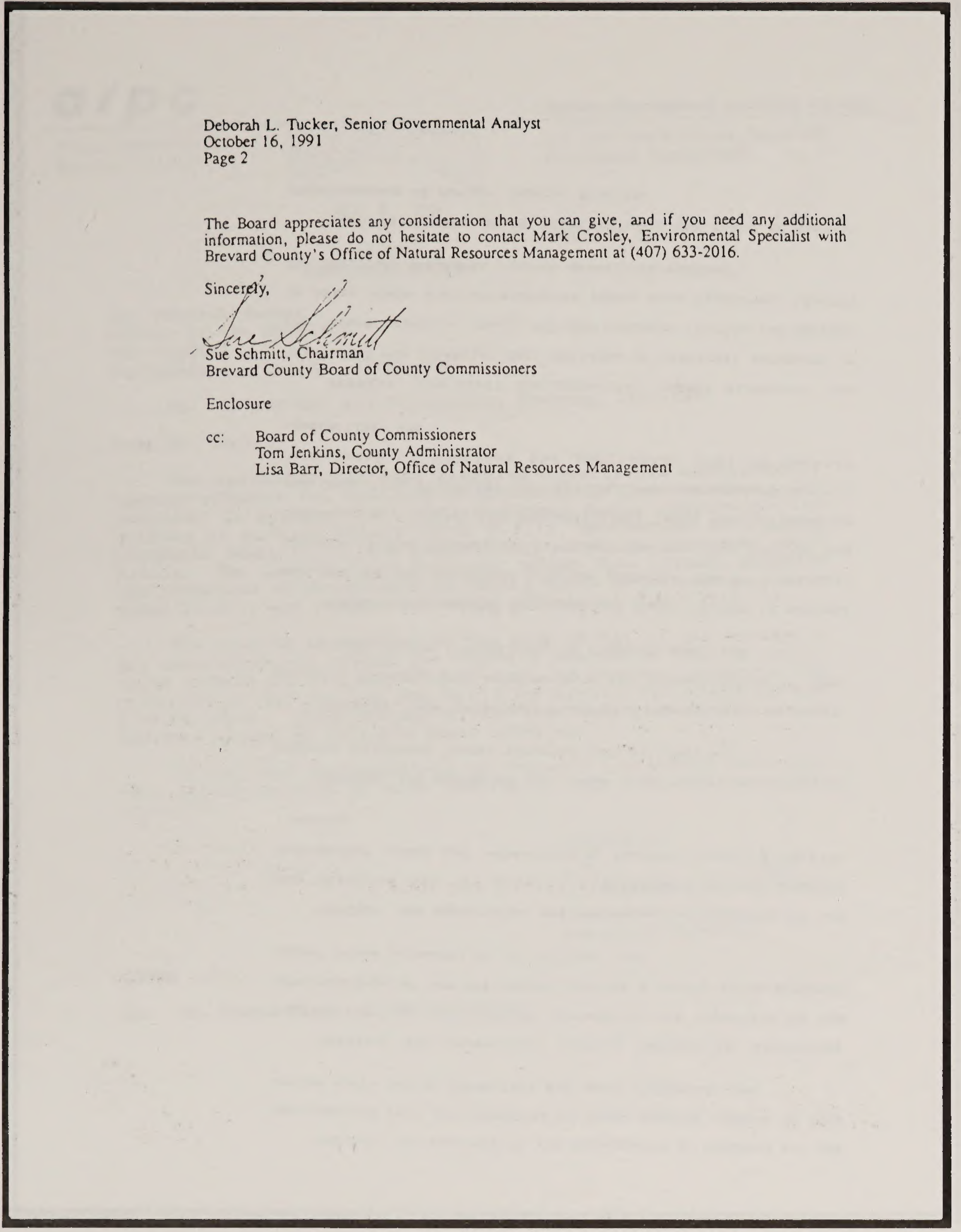
The Board is respectfully requesting that you review its resolution for inclusion in the Governor's comments and recommendations to the Department of the Interior, concerning OCS oil and gas leasing off of the coast of Florida.

As you may be aware, Brevard County contains approximately 70 miles of coastline, of which approximately 40 miles are within local jurisdiction. The remaining areas are under Federal jurisdiction supporting the Kennedy Space Center and its launch operations.

In Brevard County, the coastline and offshore waters are the single most important aspect of the local economy. Commercial fishing, tourism, port activities, recreational fishing and boating, and beach-related recreation are primary elements of the local revenue. In addition, Brevard County is the largest nesting area for the loggerhead turtle (Caretta caretta) in the Western Hemisphere. The coastline and offshore waters also support many diverse ecological habitats and associated plant and animal species.

The potential risk to Florida coastal and beach habitats and their associated species as a result of OCS leasing is difficult to estimate. The potential cost of a major oil spill could significantly impact the Florida economy for many years. The Board requests that your office include the concerns identified by Brevard County in your review package. These concerns, in addition to the concerns of the State of Florida and its local communities, should be adequately addressed by the DOI prior to continued OCS oil and gas exploration off of the Florida coast.

The State of Florida is at a great risk of loss from OCS leasing, and it needs to have greater authority to review, provide input, and make recommendations for any proposed leasing off of our coastline.



The Board appreciates any consideration that you can give, and if you need any additional information, please do not hesitate to contact Mark Crosley, Environmental Specialist with Brevard County's Office of Natural Resources Management at (407) 633-2016.

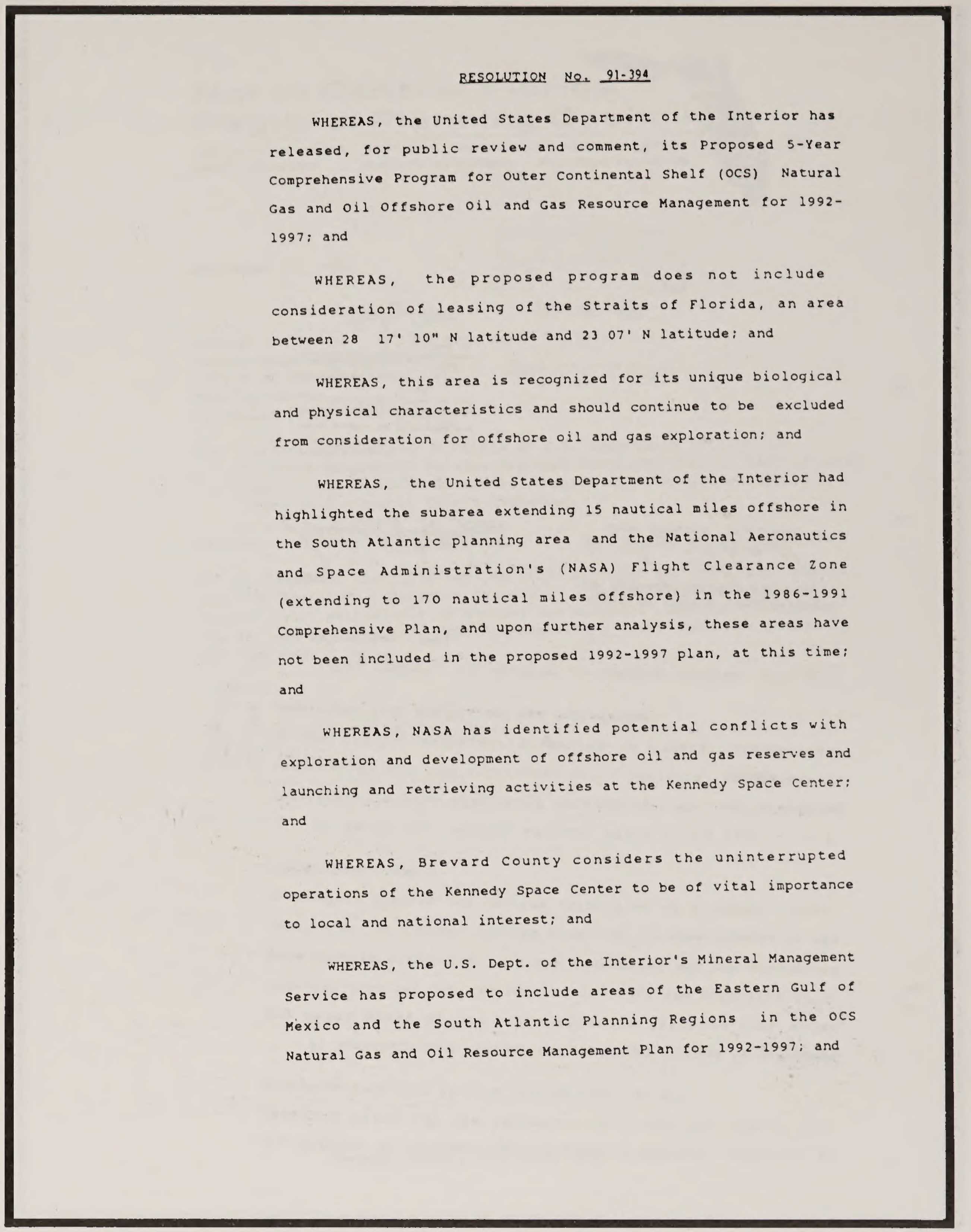
Sincerely,

Sue Schmitt

Sue Schmitt, Chairman
Brevard County Board of County Commissioners

Enclosure

cc: Board of County Commissioners
Tom Jenkins, County Administrator
Lisa Barr, Director, Office of Natural Resources Management



RESOLUTION No. 91-394

WHEREAS, the United States Department of the Interior has released, for public review and comment, its Proposed 5-Year Comprehensive Program for Outer Continental Shelf (OCS) Natural Gas and Oil Offshore Oil and Gas Resource Management for 1992-1997; and

WHEREAS, the proposed program does not include consideration of leasing of the Straits of Florida, an area between 28 17' 10" N latitude and 23 07' N latitude; and

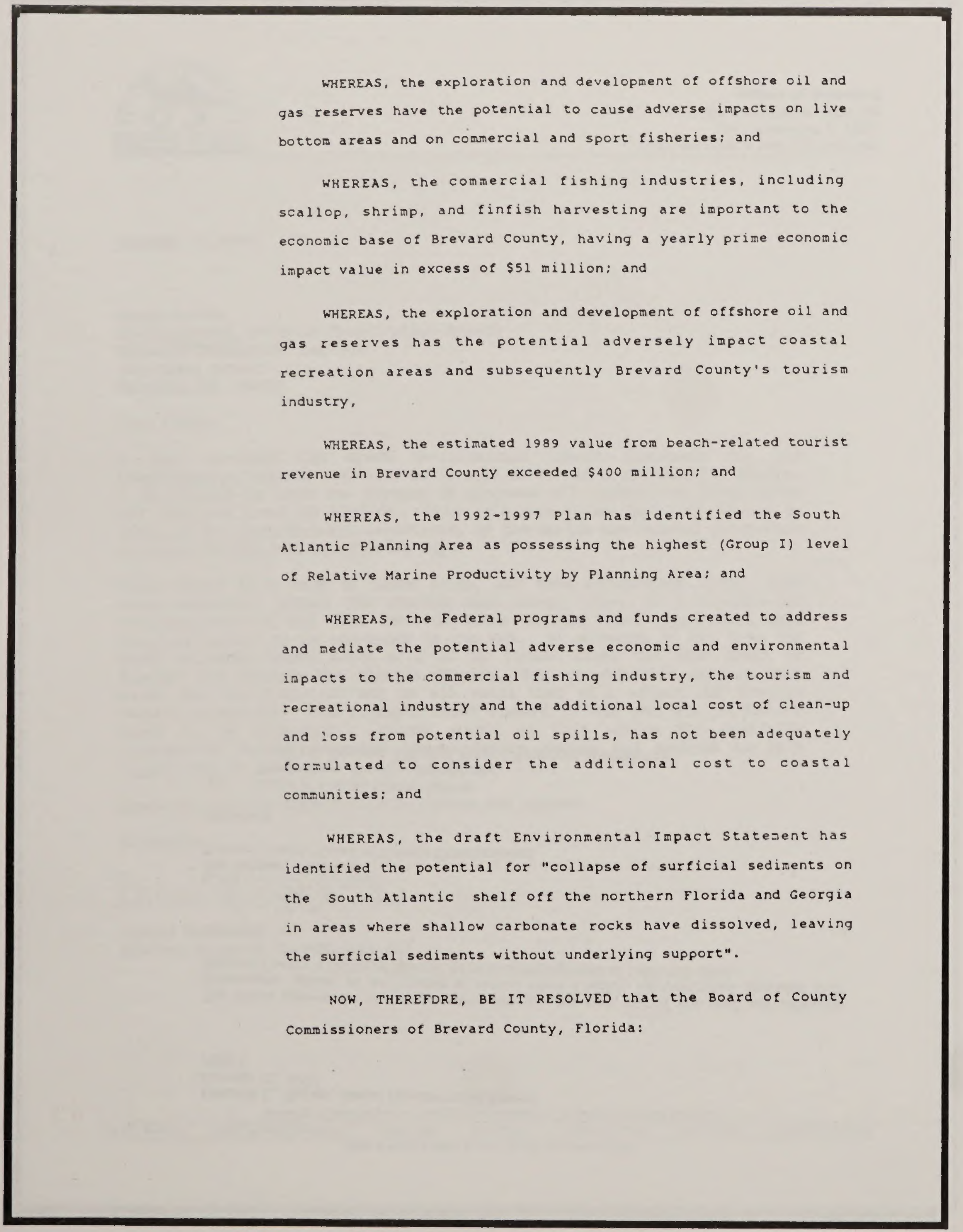
WHEREAS, this area is recognized for its unique biological and physical characteristics and should continue to be excluded from consideration for offshore oil and gas exploration; and

WHEREAS, the United States Department of the Interior had highlighted the subarea extending 15 nautical miles offshore in the South Atlantic planning area and the National Aeronautics and Space Administration's (NASA) Flight Clearance Zone (extending to 170 nautical miles offshore) in the 1986-1991 Comprehensive Plan, and upon further analysis, these areas have not been included in the proposed 1992-1997 plan, at this time; and

WHEREAS, NASA has identified potential conflicts with exploration and development of offshore oil and gas reserves and launching and retrieving activities at the Kennedy Space Center; and

WHEREAS, Brevard County considers the uninterrupted operations of the Kennedy Space Center to be of vital importance to local and national interest; and

WHEREAS, the U.S. Dept. of the Interior's Mineral Management Service has proposed to include areas of the Eastern Gulf of Mexico and the South Atlantic Planning Regions in the OCS Natural Gas and Oil Resource Management Plan for 1992-1997; and



WHEREAS, the exploration and development of offshore oil and gas reserves have the potential to cause adverse impacts on live bottom areas and on commercial and sport fisheries; and

WHEREAS, the commercial fishing industries, including scallop, shrimp, and finfish harvesting are important to the economic base of Brevard County, having a yearly prime economic impact value in excess of $51 million; and

WHEREAS, the exploration and development of offshore oil and gas reserves has the potential adversely impact coastal recreation areas and subsequently Brevard County's tourism industry,

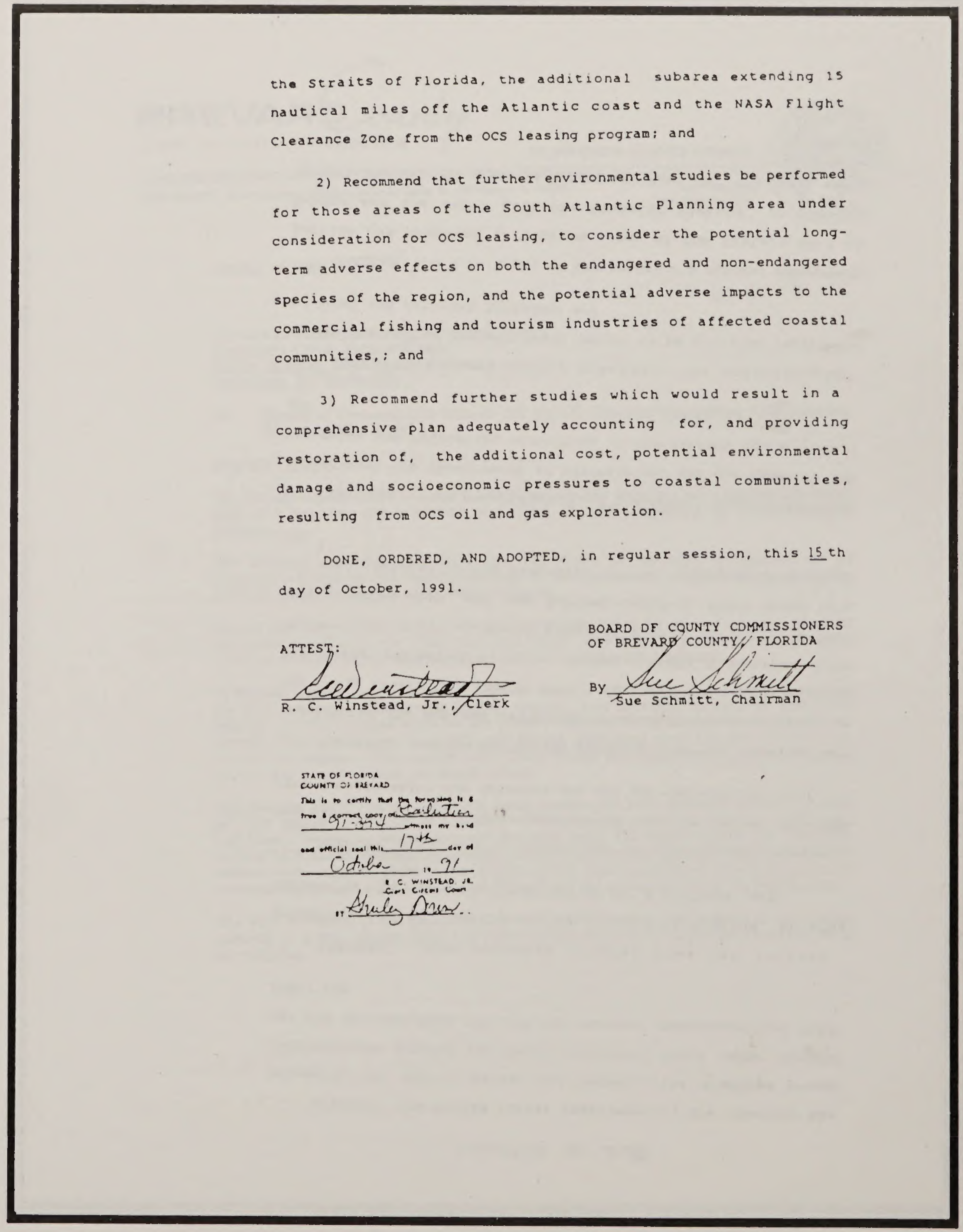
WHEREAS, the estimated 1989 value from beach-related tourist revenue in Brevard County exceeded $400 million; and

WHEREAS, the 1992-1997 Plan has identified the South Atlantic Planning Area as possessing the highest (Group I) level of Relative Marine Productivity by Planning Area; and

WHEREAS, the Federal programs and funds created to address and mediate the potential adverse economic and environmental impacts to the commercial fishing industry, the tourism and recreational industry and the additional local cost of clean-up and loss from potential oil spills, has not been adequately formulated to consider the additional cost to coastal communities; and

WHEREAS, the draft Environmental Impact Statement has identified the potential for "collapse of surficial sediments on the South Atlantic shelf off the northern Florida and Georgia in areas where shallow carbonate rocks have dissolved, leaving the surficial sediments without underlying support".

NOW, THEREFDRE, BE IT RESOLVED that the Board of County Commissioners of Brevard County, Florida:



the Straits of Florida, the additional subarea extending 15 nautical miles off the Atlantic coast and the NASA Flight Clearance Zone from the OCS leasing program; and

2) Recommend that further environmental studies be performed for those areas of the South Atlantic Planning area under consideration for OCS leasing, to consider the potential long-term adverse effects on both the endangered and non-endangered species of the region, and the potential adverse impacts to the commercial fishing and tourism industries of affected coastal communities,; and

3) Recommend further studies which would result in a comprehensive plan adequately accounting for, and providing restoration of, the additional cost, potential environmental damage and socioeconomic pressures to coastal communities, resulting from OCS oil and gas exploration.

DONE, ORDERED, AND ADOPTED, in regular session, this 15th day of October, 1991.

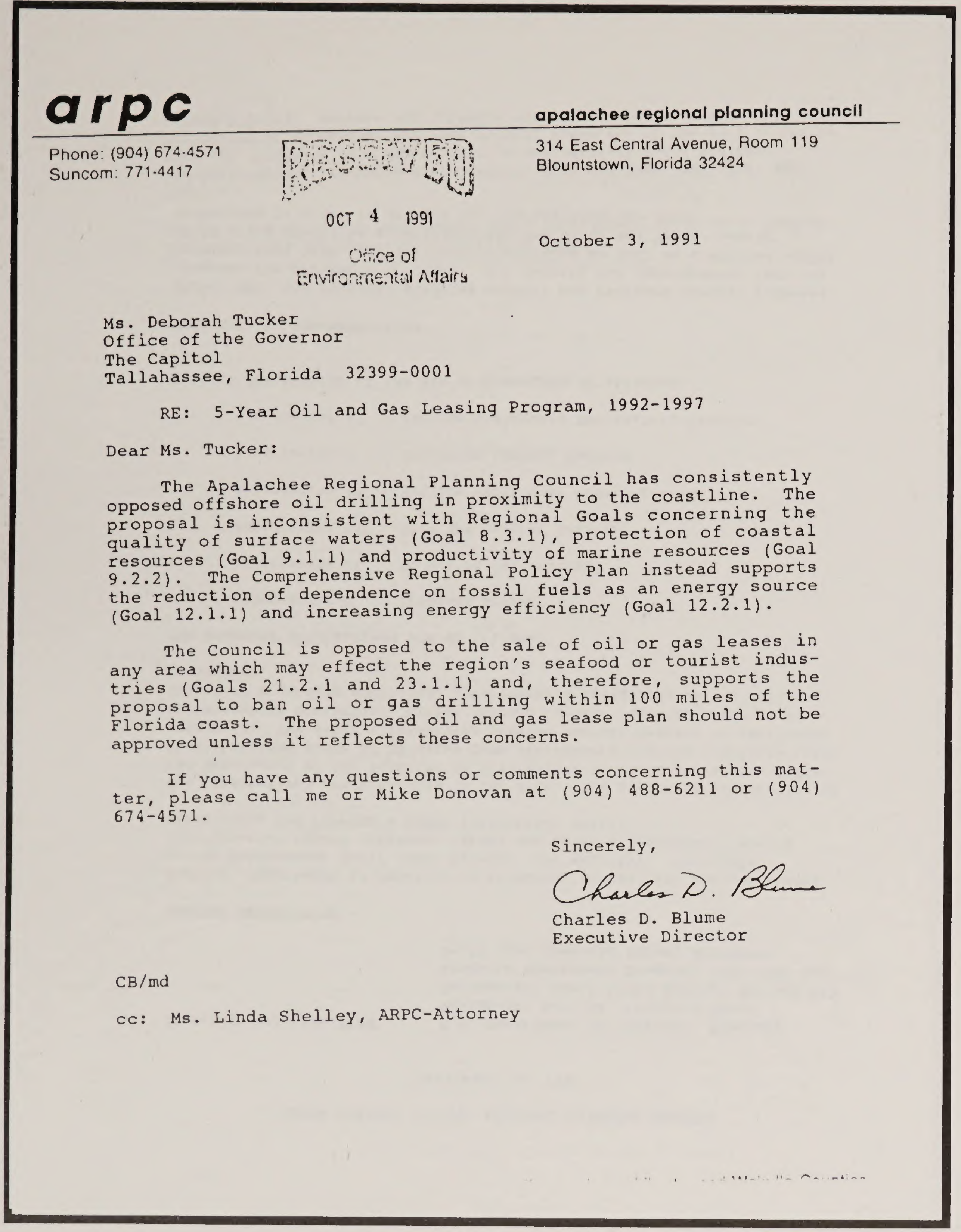
ATTEST:

R. C. Winstead, Jr., Clerk

BOARD DF COUNTY CDMMISSIONERS
OF BREVARD COUNTY, FLORIDA

By Sue Schmitt
Sue Schmitt, Chairman

STATE OF FLORIDA
COUNTY OF BREVARD
This is to certify that the foregoing is a
true & correct copy of Resolution
91-374 witness my hand
and official seal this 17th day of
October 19 91
R. C. WINSTEAD, JR.
Clerk Circuit Court
BY



arpc

apalachee regional planning council

Phone: (904) 674-4571
Suncom: 771-4417

314 East Central Avenue, Room 119
Blountstown, Florida 32424

RECEIVED
OCT 4 1991
Office of
Environmental Affairs

October 3, 1991

Ms. Deborah Tucker
Office of the Governor
The Capitol
Tallahassee, Florida 32399-0001

RE: 5-Year Oil and Gas Leasing Program, 1992-1997

Dear Ms. Tucker:

The Apalachee Regional Planning Council has consistently opposed offshore oil drilling in proximity to the coastline. The proposal is inconsistent with Regional Goals concerning the quality of surface waters (Goal 8.3.1), protection of coastal resources (Goal 9.1.1) and productivity of marine resources (Goal 9.2.2). The Comprehensive Regional Policy Plan instead supports the reduction of dependence on fossil fuels as an energy source (Goal 12.1.1) and increasing energy efficiency (Goal 12.2.1).

The Council is opposed to the sale of oil or gas leases in any area which may effect the region's seafood or tourist industries (Goals 21.2.1 and 23.1.1) and, therefore, supports the proposal to ban oil or gas drilling within 100 miles of the Florida coast. The proposed oil and gas lease plan should not be approved unless it reflects these concerns.

If you have any questions or comments concerning this matter, please call me or Mike Donovan at (904) 488-6211 or (904) 674-4571.

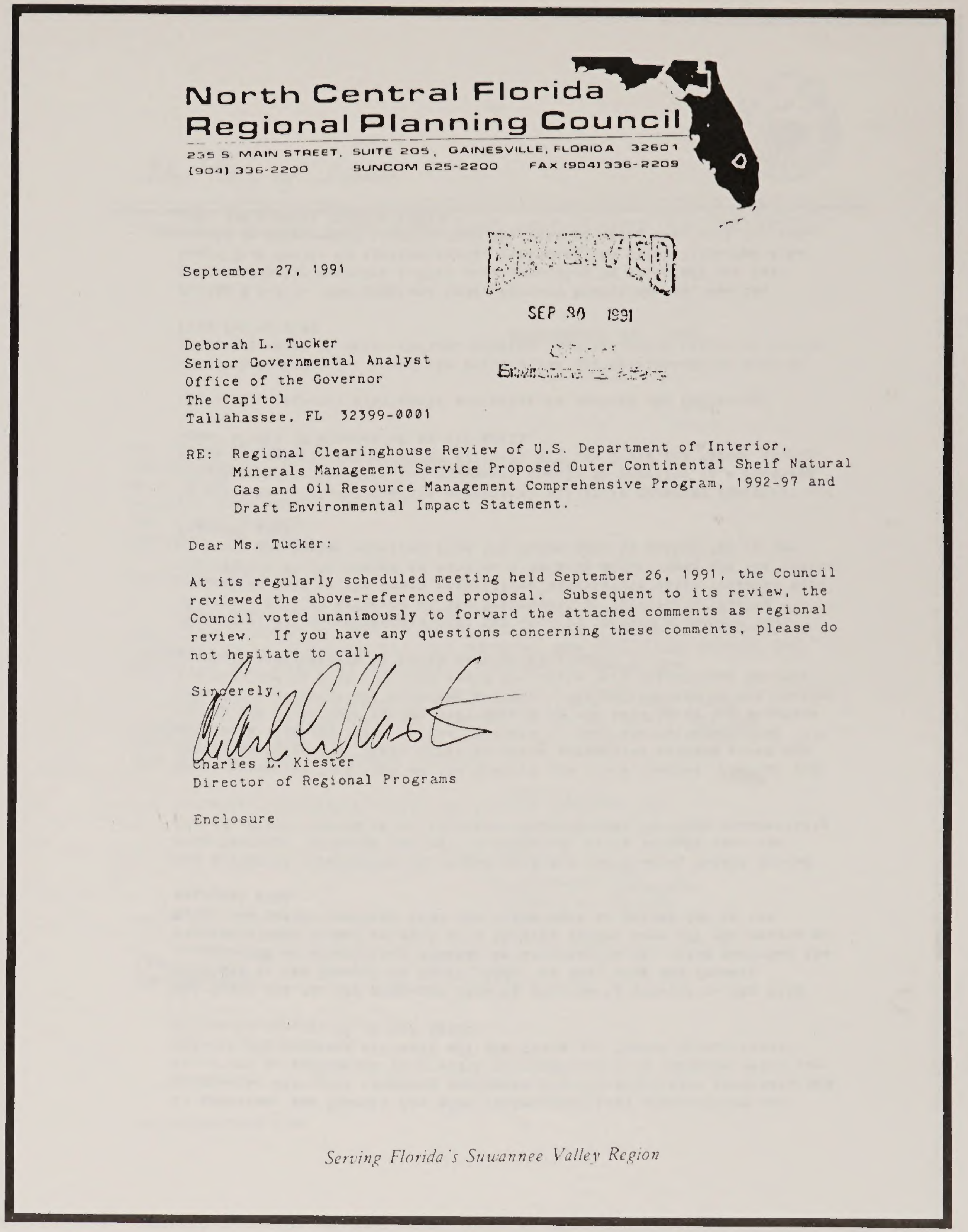
Sincerely,

Charles D. Blume

Charles D. Blume
Executive Director

CB/md

cc: Ms. Linda Shelley, ARPC-Attorney



North Central Florida Regional Planning Council

235 S. MAIN STREET, SUITE 205, GAINESVILLE, FLORIDA 32601
(904) 336-2200 SUNCOM 625-2200 FAX (904) 336-2209

RECEIVED
SEP 30 1991
Office of
Environmental Affairs

September 27, 1991

Deborah L. Tucker
Senior Governmental Analyst
Office of the Governor
The Capitol
Tallahassee, FL 32399-0001

RE: Regional Clearinghouse Review of U.S. Department of Interior, Minerals Management Service Proposed Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program, 1992-97 and Draft Environmental Impact Statement.

Dear Ms. Tucker:

At its regularly scheduled meeting held September 26, 1991, the Council reviewed the above-referenced proposal. Subsequent to its review, the Council voted unanimously to forward the attached comments as regional review. If you have any questions concerning these comments, please do not hesitate to call.

Sincerely,

Charles D. Kiester
Director of Regional Programs

Enclosure

NORTH CENTRAL FLORIDA REGIONAL PLANNING COUNCIL

September 25, 1991

Clearinghouse Item #128 - U.S. Department of Interior, Minerals Management Service, Proposed Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program, 1992-1997 and Draft Environmental Impact Statement

PROJECT DESCRIPTION

The U.S. Department of Interior is proposing to sell oil and gas leases on the Continental Shelf (OCS) between 1992 and 1997. The draft environmental impact statement (DEIS) addresses all proposed leasing sites along the Florida's outer continental shelf.

Six alternatives are presented in the DEIS. The preferred alternative of the Department of the Interior is Alternative I, which provides a buffer with a minimum width of 30 miles from the western Florida coastline (see attached). The other alternatives provide various degrees of additional environmental protection, either through further limiting areas to be leased or providing additional environmental safeguards in the drilling procedures.

The proposed alternatives are as follows:

- Alternative I - Proposed Action
- Alternative II - No Action (no leasing)
- Alternative III - Slow the Pace of Leasing
- Alternative IV - Exclude Additional Planning Areas
- Alternative V - Establish Coastal Buffers
- Alternative VI - Exclude Designated Bathymetric Features

A brief description of the six alternatives is attached.

ANALYSIS AND RECOMMENDATION

Since 1987, the regional planning council has reviewed several proposed programs for off-shore drilling. The Council has consistently take the position that both the Florida Middle Ground as well as a minimum buffer of 30 miles should be established off the Dixie and Taylor County coastlines in order to protect the Florida Seagrass Beds.

In addition, the Council has also recommended that state-of-the-art mechanical oil-spill response equipment and oil-dispersant chemicals and equipment be maintained in a state of readiness in a location which can service any proposed oil well off the Dixie and Taylor County coast within 60 minutes of an oil spill.

The draft EIS for the proposed leasing program is similar to the DEIS reviewed by the Council in April 1990. At that time the Council recommended an alternative similar to Alternative VI, which excluded the Florida Middle Ground as well as a 30-mile buffer zone off the coasts of Dixie and Taylor counties from the lease sale as called for in the regional plan.

The preferred alternative no longer excludes the Florida Middle Ground from leasing. Although not well documented, it is thought that the Florida Middle Ground is an important feeding area for many commercially valuable fish which frequent the Florida Seagrass Beds.

Many commercial fish such as the spotted sea trout, mullet, redfish and others spend much of their lives in these productive wetland areas and off-shore seagrass beds. Crabs, oysters, clams, several species of shrimp and other Gulf marine life depend on the salt marsh and seagrass beds for protection and breeding grounds. The destruction of the marshes and the Florida Middle Ground could therefore have significant adverse economic consequences to north central Florida.

Therefore, it is recommended that the Council forward a comment that Alternative VI be selected as the Department of Interior's leasing program as this is the least restrictive alternative which excludes both the Florida Middle Ground as well as a 30-mile buffer zone off the coasts of Dixie and Taylor counties from the lease sale as called for in the regional plan.

In addition, state-of-the-art mechanical oil-spill response equipment and oil-dispersant chemicals and equipment should be provided in a location which can service any proposed oil well off the Dixie and Taylor County coast within 60 minutes of an oil spill.

Applicable regional plan goals and policies include the following:

REGIONAL GOAL 9.2.2. Avoid the exploration and development of mineral resources which threaten marine, aquatic, and estuarine resources (State Plan Policy 9.8).

Policy 9.2.2.1. The seagrass beds, Florida Middle Ground, and the Congressionally mandated buffer area extending 30 miles off the Gulf Coast from Naples to Appalachicola, including the Gainesville Map Area, should be permanently removed from the list of areas available for oil, gas, and mineral leasing (D01).

Policy 9.2.2.2. Onshore and offshore exploration, development, and production of petroleum, gas, and mineral resources of the Gulf of Mexico shall be conducted in a manner that is ecologically sound and that produces minimal environmental impacts (DOI, DCA, DNR, DER, RPC, WMD, LGV).

Policy 9.2.2.3. Outer Continental Shelf development shall occur only in areas of least environmental sensitivity (DOI).

The City of Destin

Post Office Box 399 Destin, Florida 32540 (904) 837-4242 FAX (904) 837-3267

September 19, 1991

Ms. Deborah Purvis
Environmental Project Coordination Branch
M.S. 4320
Mineral Management Service
381 Elden Street
Herndon, VA 22070

Dear Ms. Purvis:

Enclosed is a copy of Resolution 91-18 recently passed by the City Council of Destin, Florida. This resolution expresses opposition to offshore oil and natural gas drilling within 100 miles of the State of Florida's Panhandle Shoreline.

We have sent copies of this resolution to our State legislatives urging them to support a 100 mile oil and gas drilling ban and to turn down Chevron's request to drill for oil and gas off the Panhandle coast.

Sincerely,

THE CITY OF DESTIN

James W. Vaughn

James W. Vaughn
Mayor

/lg
Enclosure(1)

Wp51\Docs\Resol\Res91-18.Req

RESOLUTION NO. 91-18

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF DESTIN, FLORIDA, EXPRESSING OPPOSITION TO OFFSHORE OIL AND NATURAL GAS DRILLING WITHIN 100 MILES OF THE STATE OF FLORIDA'S PANHANDLE SHORELINE.

WHEREAS, the entire west coast of Florida deserves protection against the potential destruction of oil and gas drilling in coastal waters; and

WHEREAS, offshore waters along the Panhandle contain significant ecosystems and marine wildlife and in addition to the environmental and aesthetic values provided by these natural resources, the tourism and fishing industries supported by them along the upper west coast and Panhandle bring in millions of dollars a year in local and State revenue; and

WHEREAS, wind and water currents off the Panhandle would cause oil spills to destroy oyster harvesting; fishing industries and tourism in North Florida and even routine drilling operations could cause widespread pollution damage to the Panhandle beaches, wetlands and sea grasses; and

WHEREAS, catastrophic risks exist during every phase of operation from blowouts, accidents, increased tanker traffic and pipeline ruptures; and

WHEREAS, there is no buffer zone for federal waters west of Cape San Blas as there is on the remaining west coast of the State; and

WHEREAS, Chevron Oil Company has proposed drilling for oil and gas off the Panhandle coast;

NOW, THEREFORE, BE IT RESOLVED that the City Council of Destin, Florida, urges Governor Lawton Chiles to support a 100 mile oil and gas drilling ban and turn down Chevron's request to drill for oil and gas off the Panhandle coast.

RESOLVED THIS 3RD DAY OF SEPTEMBER 1991.

CITY OF DESTIN

James W. Vaughn, Mayor

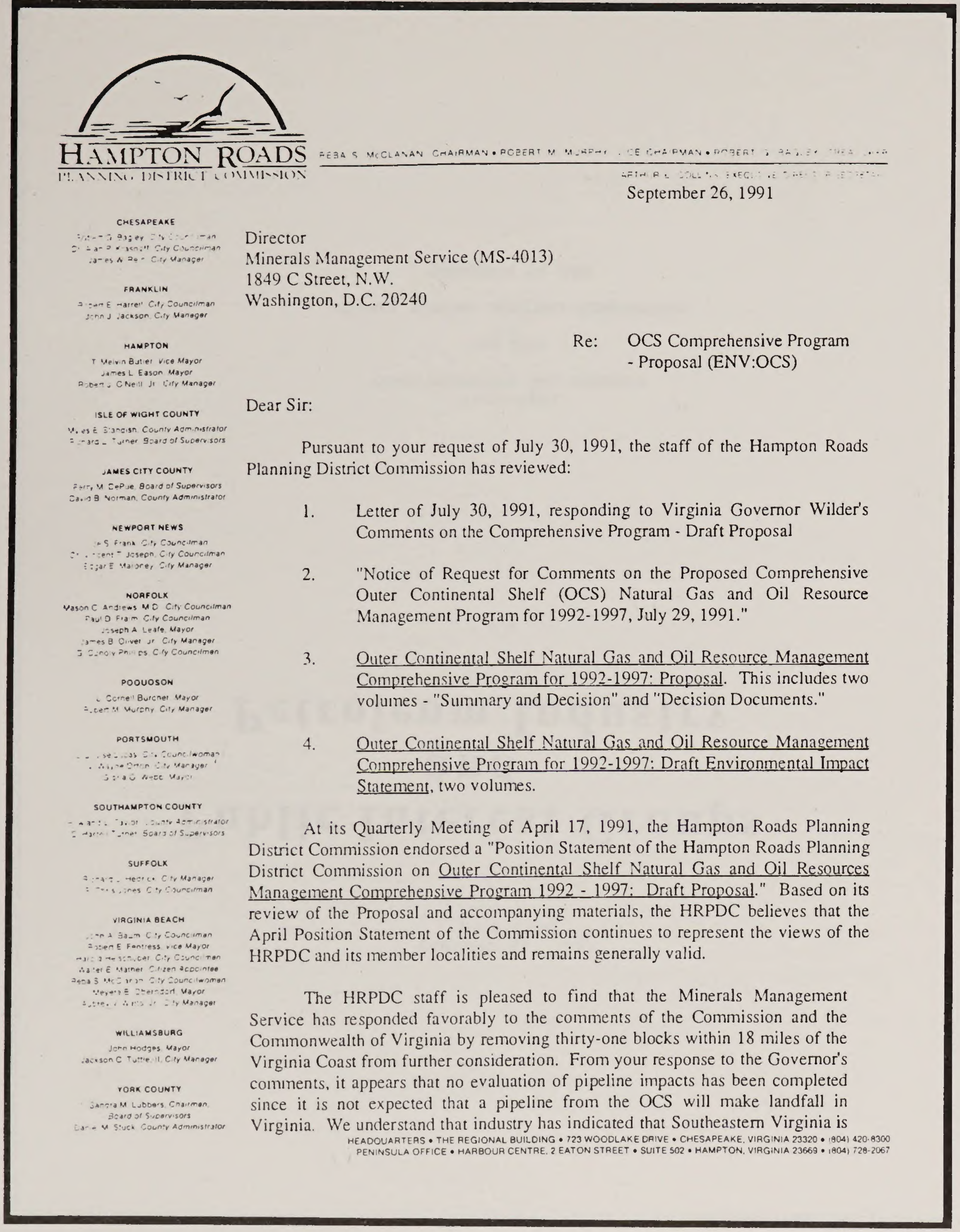
ATTEST

Philip Cook, City Manager

Carolyn Lee Garrett

Carolyn Lee Garrett, City Clerk

wp51\docs\resol\RES91-18.Doc



HAMPTON ROADS
PLANNING DISTRICT COMMISSION

REBA S. McCLANAN, CHAIRMAN • ROBERT M. MURPHY, VICE CHAIRMAN • ROBERT G. BAGLEY, TREASURER
ARTHUR L. COLLINS, EXECUTIVE DIRECTOR/SECRETARY

CHESAPEAKE
Robert G. Bagley, City Councilman
Dr. Alan P. Krasnoff, City Councilman
James A. Rein, City Manager

FRANKLIN
[illegible] E. Harrell, City Councilman
John J. Jackson, City Manager

HAMPTON
T. Melvin Butler, Vice Mayor
James L. Eason, Mayor
Robert J. O'Neill, Jr., City Manager

ISLE OF WIGHT COUNTY
Myles E. Standish, County Administrator
Richard L. Turner, Board of Supervisors

JAMES CITY COUNTY
Perry M. DePue, Board of Supervisors
David B. Norman, County Administrator

NEWPORT NEWS
Joe S. Frank, City Councilman
Dr. Vincent T. Joseph, City Councilman
Edgar E. Maroney, City Manager

NORFOLK
Mason C. Andrews, M.D., City Councilman
Paul D. Fraim, City Councilman
Joseph A. Leafe, Mayor
James B. Oliver, Jr., City Manager
G. Conoly Phillips, City Councilmen

POQUOSON
L. Cornell Burcher, Mayor
Robert M. Murphy, City Manager

PORTSMOUTH
[illegible] Lucas, City Councilwoman
[illegible], City Manager
Gloria O. Webb, Mayor

SOUTHAMPTON COUNTY
[illegible] Taylor, County Administrator
[illegible] Turner, Board of Supervisors

SUFFOLK
Richard L. Hedrick, City Manager
[illegible] Jones, City Councilman

VIRGINIA BEACH
John A. Baum, City Councilman
Robert E. Fentress, Vice Mayor
Harold Heischober, City Councilmen
Walter E. Mather, Citizen Appointee
Reba S. McClanan, City Councilwoman
Meyera E. Oberndorf, Mayor
Aubrey V. Watts, Jr., City Manager

WILLIAMSBURG
John Hodges, Mayor
Jackson C. Tuttle, II, City Manager

YORK COUNTY
Sandra M. Lubbers, Chairman, Board of Supervisors
Daniel M. Stuck, County Administrator

September 26, 1991

Director
Minerals Management Service (MS-4013)
1849 C Street, N.W.
Washington, D.C. 20240

Re: OCS Comprehensive Program
- Proposal (ENV:OCS)

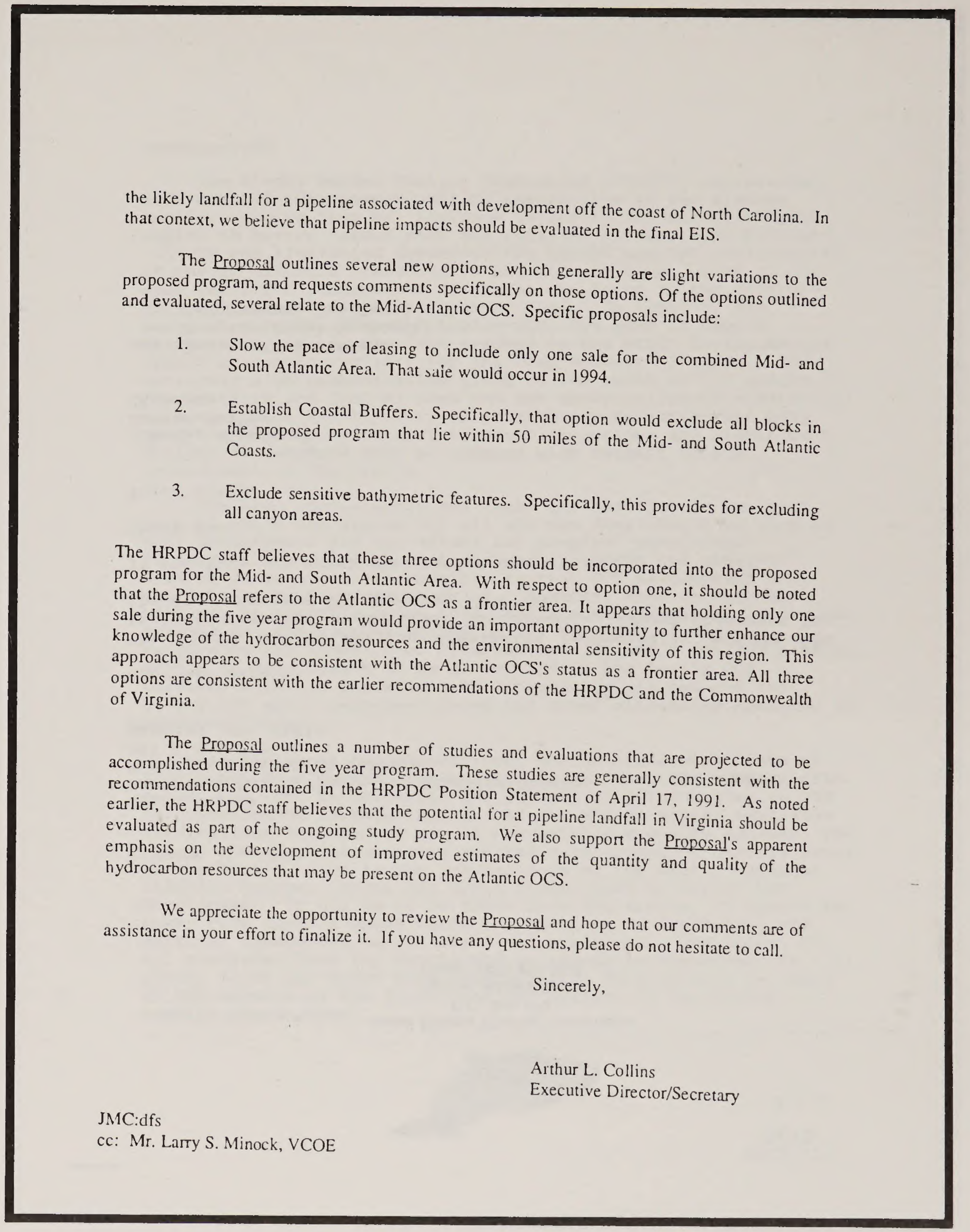
Dear Sir:

Pursuant to your request of July 30, 1991, the staff of the Hampton Roads Planning District Commission has reviewed:

1. Letter of July 30, 1991, responding to Virginia Governor Wilder's Comments on the Comprehensive Program - Draft Proposal
2. "Notice of Request for Comments on the Proposed Comprehensive Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program for 1992-1997, July 29, 1991."
3. Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program for 1992-1997: Proposal. This includes two volumes - "Summary and Decision" and "Decision Documents."
4. Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program for 1992-1997: Draft Environmental Impact Statement, two volumes.

At its Quarterly Meeting of April 17, 1991, the Hampton Roads Planning District Commission endorsed a "Position Statement of the Hampton Roads Planning District Commission on Outer Continental Shelf Natural Gas and Oil Resources Management Comprehensive Program 1992 - 1997: Draft Proposal." Based on its review of the Proposal and accompanying materials, the HRPDC believes that the April Position Statement of the Commission continues to represent the views of the HRPDC and its member localities and remains generally valid.

The HRPDC staff is pleased to find that the Minerals Management Service has responded favorably to the comments of the Commission and the Commonwealth of Virginia by removing thirty-one blocks within 18 miles of the Virginia Coast from further consideration. From your response to the Governor's comments, it appears that no evaluation of pipeline impacts has been completed since it is not expected that a pipeline from the OCS will make landfall in Virginia. We understand that industry has indicated that Southeastern Virginia is



the likely landfall for a pipeline associated with development off the coast of North Carolina. In that context, we believe that pipeline impacts should be evaluated in the final EIS.

The Proposal outlines several new options, which generally are slight variations to the proposed program, and requests comments specifically on those options. Of the options outlined and evaluated, several relate to the Mid-Atlantic OCS. Specific proposals include:

1. Slow the pace of leasing to include only one sale for the combined Mid- and South Atlantic Area. That sale would occur in 1994.
2. Establish Coastal Buffers. Specifically, that option would exclude all blocks in the proposed program that lie within 50 miles of the Mid- and South Atlantic Coasts.
3. Exclude sensitive bathymetric features. Specifically, this provides for excluding all canyon areas.

The HRPDC staff believes that these three options should be incorporated into the proposed program for the Mid- and South Atlantic Area. With respect to option one, it should be noted that the Proposal refers to the Atlantic OCS as a frontier area. It appears that holding only one sale during the five year program would provide an important opportunity to further enhance our knowledge of the hydrocarbon resources and the environmental sensitivity of this region. This approach appears to be consistent with the Atlantic OCS's status as a frontier area. All three options are consistent with the earlier recommendations of the HRPDC and the Commonwealth of Virginia.

The Proposal outlines a number of studies and evaluations that are projected to be accomplished during the five year program. These studies are generally consistent with the recommendations contained in the HRPDC Position Statement of April 17, 1991. As noted earlier, the HRPDC staff believes that the potential for a pipeline landfall in Virginia should be evaluated as part of the ongoing study program. We also support the Proposal's apparent emphasis on the development of improved estimates of the quantity and quality of the hydrocarbon resources that may be present on the Atlantic OCS.

We appreciate the opportunity to review the Proposal and hope that our comments are of assistance in your effort to finalize it. If you have any questions, please do not hesitate to call.

Sincerely,

Arthur L. Collins
Executive Director/Secretary

JMC:dfs
cc: Mr. Larry S. Minock, VCOE

Public Interest Groups and Petroleum Industry

Alaska Eskimo Whaling Commission
P.O. Box 570
Barrow, Alaska 99723
Phone: (907) 852-2392

RECEIVED
OEAD
[illegible] 30 1991

October 24, 1991

Debra Purvis
Environmental Projects Coordination Branch
Minerals Management Service
381 Elden Street
Herndon, VA 22070

Dear Ms. Purvis:

The Alaska Eskimo Whaling Commission respectfully submits the enclosed comments on the Draft Environmental Impact Statement for the Comprehensive OCS Program, 1992-1997.

If you have any questions, please contact me.

Thank you.

Yours truly,

Burton Rexford

Burton Rexford
Chairman

cc: Senator Ted Stevens
Senator Frank Murkowski
Congressman Don Young

COMMENTS OF THE
ALASKA ESKIMO WHALING COMMISSION
ON THE
COMPREHENSIVE OCS PROGRAM
1992-1997

Submitted
October 29, 1991

INTRODUCTION

The Alaska Eskimo Whaling Commission ("AEWC") represents nine coastal subsistence whaling communities in the Alaskan Arctic, ranging from St. Lawrence Island in the Bering Straits region to Barter Island near the Canadian border. Our peoples' culture and livelihood depend on the health and the availability of the subsistence resources we are able to take. Some of our most important subsistence resources are found in the offshore waters of the Beaufort and Chukchi Seas. In light of our peoples' dependence on the Arctic OCS, the AEWC is deeply disturbed by the conclusions reached in the Draft Environmental Impact Statement ("DEIS") for the Comprehensive Program. The extremely high probabilities given to the event of oil spills in the Beaufort and Chukchi Seas and the anticipation of substantial impacts on the availability of subsistence resources can only lead to the conclusion that alternative actions and significant mitigation measures must be adopted with respect to OCS development in the Arctic.

The AEWC consistently has taken the position in the past that it would not oppose OCS oil and gas development so long as that development did not affect our peoples' subsistence resources. The AEWC has not changed its views and remains willing to consider the possibility that OCS development and subsistence hunting can co-exist. However, such co-existence will not be possible under this Comprehensive Program. For these reasons and the reasons stated below, the AEWC strongly encourages the adoption of Alternatives III and V for the Alaskan Arctic if development is to go forward in the Arctic OCS, together with the imposition of a carefully planned and fully tested oil spill response system and other mitigation measures as discussed below.

Despite these recommendations, the environmental risks of Arctic OCS development contemplated in the Comprehensive Program compel the AEWC to encourage the pursuit of alternatives to OCS oil development in this region. As the MMS is aware, available alternatives include the use of non-petroleum energy sources, the use of conservation measures and the development of onshore areas in the Arctic, such as the coastal zone of the Arctic National Wildlife Refuge. Given the grave risks posed by Arctic OCS development, if oil is to be taken from the Arctic, it should be taken from onshore areas where the risks of environmental and cultural damage can be contained and minimized. The amount of oil available from the Arctic OCS is minute in comparison to U.S. energy needs and under this Comprehensive Program will be taken at the expense of the livelihood and culture of the Arctic coastal communities.

A. The Comprehensive Plan, as Currently Drafted, Is in Direct Violation of Section 101 (a)(5)(A) of the Marine Mammal Protection Act

Section 101 (a)(5)(A) of the Marine Mammal Protection Act of 1972, as amended, 16 U.S.C. § 1371 (a)(5)(A) (1988) ("MMPA"), states that any taking of marine mammals permitted pursuant to that section shall "not have an unmitigable adverse impact on the availability of such species or stock for taking for subsistence uses." Under the Comprehensive Program, the MMS anticipates that "one or more important subsistence resources" will become "unavailable, undesirable for use, or available only in greatly reduced numbers for one or more periods of 1 to 2 years." Comprehensive Program DEIS, p. II-12. The Program, therefore, will achieve an illegal result. Moreover, this result is contemplated during a time when the MMS expects that "because of a projected decline in NSB CIP projects in the 1990's, wage work and cash income are likely to decline, and subsistence hunting in general may increase." Comprehensive Program DEIS, p. III-92.

In amending the MMPA in 1986 to include the above cited statutory language, the Congress specifically stated its intent that this language was designed to prohibit any activity "resulting from the agency action being considered" that is "likely to result in a reduction in availability of marine mammals to a level insufficient to allow for a harvest of resources sufficient to meet the subsistence needs of the community for marine mammals." Cong. Rec. S16305 (Oct. 15, 1986). The Congress adopted these measures in recognition of the fact that the coastal communities in northern Alaska rely heavily on marine mammals for their nutritional and cultural survival. For these remote communities, alternative food sources are not readily available.

The Department of the Interior, Bureau of Indian Affairs has conducted substantial research on the dependence of our people on our subsistence resources and on the inability of subsistence communities to substitute for resources that become unavailable.[1/] The loss of one or more marine mammal species, for even one year, can leave a community without sufficient food supplies, and can have equally devastating implications for the social and cultural health of that community.

[1/] Subsistence Study of Alaska Eskimo Whaling Villages, prepared for the U.S. Department of the Interior by Alaska consultants, Inc. with Stephen Braund & Assoc., March 1983.

For these reasons, the Congress has acted to protect our use of our subsistence resources under Federal law. In accordance with this law, the Comprehensive Plan must be amended to provide for measures that ensure that the anticipated interruptions in the availability of subsistence resources does not occur.

B. No Lease Sales Should Be Held Under the Comprehensive Program Until a Realisitic Oil Spill Response and Containment and Cleanup Demonstration Is Conducted Under Prevailing Arctic Conditions

The principal impacts expected to result in the loss of subsistence resources are those associated with oil spills. While operators apparently are required to keep some equipment on-sight and additional equipment is stored at Deadhorse, Alaska, the actual effectiveness of this equipment under prevailing environmental conditions in the Arctic has yet to be tested.

In August 1991, a number of OCS operators hosted a large meeting in Barrow, Alaska to talk with Arctic coastal residents about their concerns with respect to OCS oil and gas activities, and to explore how these concerns might be addressed. The meeting was attended by representatives of Arctic villages ranging from St. Lawrence Island to Kaktovik.

While a variety of issues were discussed, one of the central concerns raised and shared by virtually all coastal residents is the lack of knowledge as to how successful containment and cleanup of an Arctic oil spill is likely to be. The village residents agreed that their concerns could not be adequately addressed unless an actual oil spill cleanup demonstration was held under prevailing Arctic weather and ice conditions.

These concerns are very real. The success of oil spill containment and cleanup efforts in southern Alaska in recent years has not been encouraging and there is no reason to expect greater success in the Arctic. With respect to the anticipated handling of a spill in the Arctic, the AEWC has found a great deal of information on hypothetical oil spill containment and cleanup results based on spills occurring in hypothetical (usually moderate) environmental conditions. While these hypothetical spills have been contained and removed with relatively high rates of success, we have found no results of an actual cleanup to demonstrate that this success could be anticipated in a real world situation.

In addition to our lack of knowledge about the effectiveness of the technology, there is a serious question as to the actual availability of the technology. The reports on the Comprehensive Program contain discussion of the availability of containment and cleanup equipment stored at Deadhorse, some of which might be helicoptered to the sight of a spill during good weather. How will backup equipment be transported during typical Arctic weather and environmental conditions - high winds, fog, ice, darkness? How will backup equipment for the "two spills equal to or greater than 1,000 bbl" that are expected in the St. George and Navarin Basins be transported under such conditions?

If oil exploration and development are to continue in our Arctic waters, we must know exactly how an accidental spill would be handled and how successful current technology would be in addressing it. Only in this way can we learn - before the fact - what the actual limitations of the technology are and thus work with the OCS operators and the other owners of containment and cleanup equipment to address those limitations.

The AEWC believes that some who work with the OCS operators are reluctant to engage in such a demonstration. Presumably they are concerned that a less than perfect outcome would be used as a means of attempting to block future OCS activities. The AEWC recognizes that such a concern is not unfounded. However, the consequences of a failed containment and cleanup effort in the event of an actual spill would be much worse - for everyone concerned - than those stemming from less than perfect demonstration results. Therefore, as stated, we should learn how the technology actually performs before there is a real need to use it. Then, if there are problems with its performance, we can address them in advance and hopefully enjoy greater success if an actual spill ever were to occur.

C. MMS Should Adopt Alternatives III and V For Development In the Arctic OCS In Order to Allow Time for the Testing and Development of Appropriate Containment and Cleanup Technologies, As Well As Production Technologies and to Limit the Impacts to Subsistence Uses

This Comprehensive Program places a great deal of emphasis on development in the Arctic. In addition, some of the most serious adverse impacts of the development are expected to be felt in the Arctic, where coastal residents are least equipped to deal with them, and where certain of the anticipated impacts will result in violations of Federal law.

Given the shifting focus of U.S. oil and gas development to the Arctic and the potentially severe consequences of OCS development in that region, the AEWC strongly recommends that the MMS adopt Alternative III with respect to OCS activity in the Arctic. By slowing the pace of development, the MMS will permit greater opportunity for developing and testing containment and cleanup technology that can be made available and effective for use under Arctic conditions. In conjunction with this delay, MMS

should encourage and even participate in the type of oil spill cleanup demonstrations discussed above. In this way, MMS can help to promote the development of and investment in appropriate equipment.

Additionally, the AEWC and its members do not believe that long-term production in the Arctic OCS is feasible with current technology. To our knowledge, there are no production platforms and no methods of transporting oil that are capable of withstanding the severe ice conditions of the Arctic. In particular, the Comprehensive Program appears to assume that offshore oil will be transported by sub-sea pipeline, with no discussion of how such pipelines will be constructed in sub-sea permafrost and most notably no discussion of how the pipelines will withstand the gouging of pack ice and floating ice.

The Chairman of the AEWC, Burton Rexford, has been hunting marine mammals in the Arctic OCS for over 50 years. In reviewing the draft Comprehensive Program, Mr. Rexford had a number of comments that are especially relevant with respect to any plans for long-term development in the Arctic OCS. Throughout his life, Mr. Rexford has personally observed the movement and behavior of the Arctic glacial ice pack. In 1969, he watched as moving pack ice ran aground in 100 feet of water in the Beaufort Sea. Despite the vast size and tremendous weight of this ice, it is subject to sudden movement. Mr. Rexford has seen ice floes as large as five miles by 10 miles move across several miles of water in a matter of hours. Because this pack ice is so condensed and can move with such speed, its force is overwhelming, barring the possiblity of any navigation through the moving pack ice. As the MMS is well aware, this ice is present throughout the year and in some years remains so close to shore that even near-shore navigation during the summer months is impossible or extremely treacherous.

The AEWC strongly recommends that the MMS give careful consideration to the experience of the people in the Arctic communities, such as Burton Rexford, in making its long-range plans. As Mr. Rexford's experience demonstrates, offshore oil production in the Arctic will require the development of new technologies capable of withstanding Arctic sea ice. A slower pace for offshore development in the Arctic, such as would be provided under Alternative III, is clearly needed if such technology is to be created and put in place.

Finally, the AEWC strongly recommends the adoption of Alternative V, Part C-1, with respect to OCS activity in the Arctic. Exempting these particular nearshore areas from leasing should not significantly affect the amount of oil and gas ultimately recovered from the OCS. However, it would reduce the pressures being placed on the important subsistence species that migrate through and feed in this area, including bowhead whales.

Further, while the MMS has noted that the bowhead migration passes through this area before exploratory activities begin each year, there is no guarantee that the seasonal restrictions currently applied to OCS operations in the spring lead system will remain in effect indefinitely. Exempting this near-shore area now would help to ensure protections for subsistence hunting in the spring lead system in future years.

CONCLUSION

The AEWC is grateful for the opportunity to comment on this Comprehensive Program and would be happy to have its members or representatives meet with representatives of the MMS to discuss further any of the points made in these comments.

262-C San Jose Street
Salinas, CA 93901-3976
(408) 757-5864

1160 Marsh Street, Suite 218
San Luis Obispo, CA 93401-3331
(805) 543-4947

Santa Cruz (408) 425-0336
Monterey (408) 373-7306

AMERICAN LUNG ASSOCIATION *of Monterey, Santa Cruz & San Luis Obispo Counties*
The Christmas Seal People®

October 24, 1991

Minerals Management Service, DOI
Attn: Branch of Environmental Projects Coordinator
381 Elden St.,
Herndon, VA 22070-4817

Subject: DRAFT ENVIRONMENTAL IMPACT STATEMENT ON THE MMS COMPREHENSIVE PROGRAM FOR THE OCS--1992-1997

Offshore energy exploration and development pose serious air quality concerns to San Luis Obispo County due to the large emission sources associated with these operations.

The following comments address concerns regarding the air quality analysis for the Pacific region presented in the Draft EIS.

It is essential that the assumptions used and the analyses conducted represent reasonable worst-case estimates of the potential impacts; such is not the case in the air quality analyses presented in the Draft EIS.

The emissions projected for both the base case and high case scenarios appear to be significantly underestimated. Throughout the document the assumption is made that no new onshore or nearshore support facilities would be required to handle the produced crude and natural gas from projected offshore development. These assumptions are unrealistic and inappropriate for this analysis.

Existing onshore oil and gas processing facilities are also inadequate to support the production from the projected platforms. Crude produced in this basin is very heavy and would require primary processing before it could be transported to refineries for further treatment. The only oil processing facility in this area is the Unocal Santa Maria Refinery, which is currently operating at or near capacity.

The assumed expansion of the offshore pipeline network and use of the existing onshore pipeline system is impractical and likely infeasible for platforms north of Point Conception.

The emissions associated with the onshore support facilities required to handle the produced oil and gas from projected offshore development could be substantial. Failure to address those facilities and their emissions represents a significant flaw in the air quality analyses presented in this document.

Offshore energy exploration and development pose serious air quality concerns to the County due to the large emissions sources associated with these operations. The potential emissions impact of future offshore development are underestimated. Existing onshore infrastructure is limited in this area. New supply bases, pipelines, and onshore oil and gas processing facilities will be required to support offshore development in the northern Santa Maria Basin. Substantial emissions of ROG and NOX can be associated with operation of these facilities. Those emissions were not accounted for in the Draft EIS. The emissions that are included in the analyses are dismissed as insignificant due to the assumption that full offsets will be provided. However, all coastal counties in the Planning Area, including San Luis Obispo County, have been designated as nonattainment areas for the state ozone and PM10 standards.

Thank you for the opportunity to provide input to this process.

Sincerely,

Janet E. Stecher

Janet E. Stecher,
Program Director

BERING STRAITS NATIVE CORPORATION

August 21, 1991

Ms. Debra Purvis
Environmental Projects
Coordination Branch
Minerals Management Service
381 Elden Street
Mail Stop 4320
Herndon, VA 22070

Dear Ms. Purvis:

Thank you for the opportunity to comment on the "Outer Continental Shelf Natural Gas and Oil Resource Management Program 1992-1997".

These comments to the C.P. and DEIS are being made to ensure the balance of the two major concerns for the Bering Straits Native Corporation and its shareholders, subsistence and development.

In general our concerns center on the following: subsistence and fishing related activities on land and off shore, land use and response to potential oil spills.

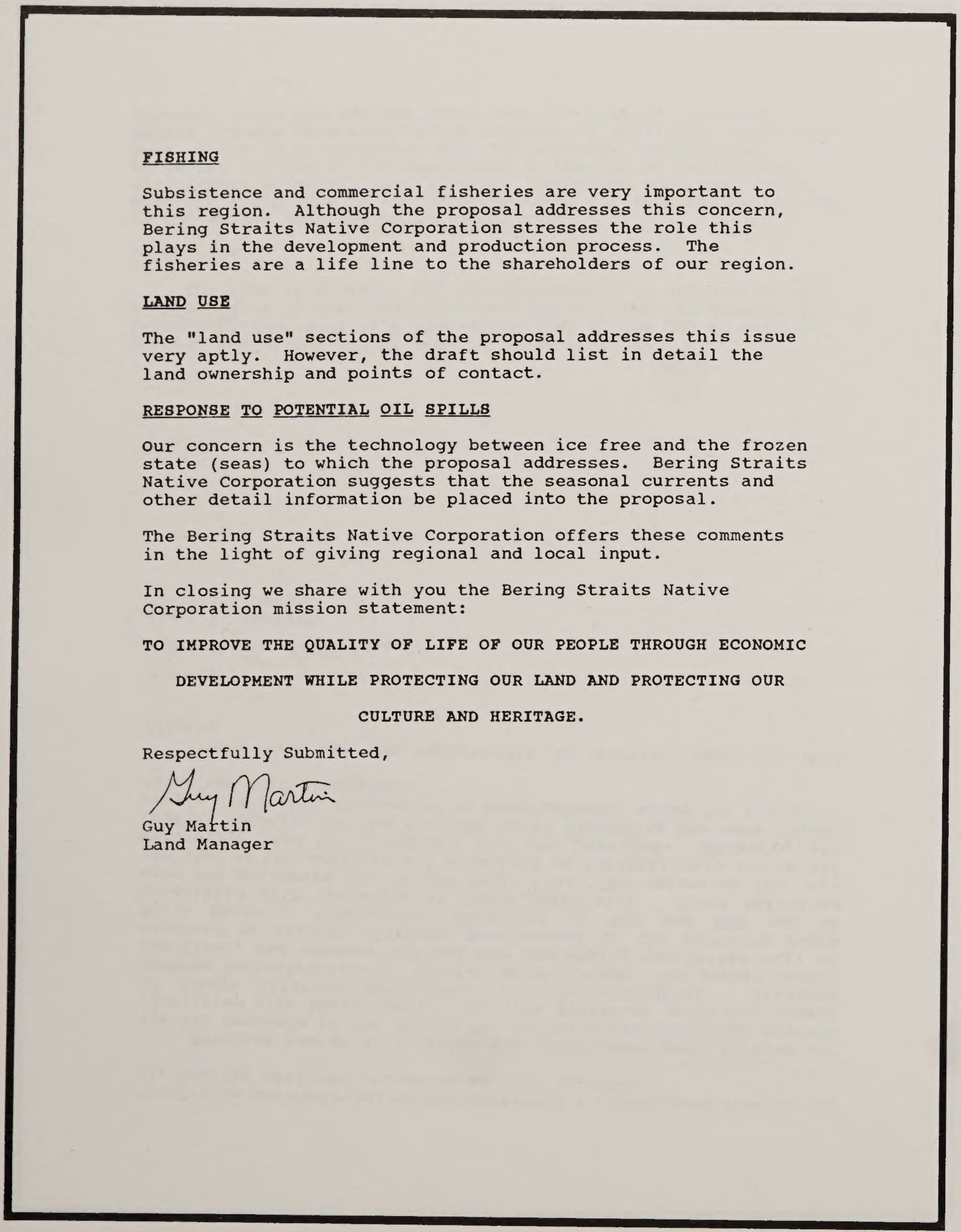
SUBSISTENCE

The "draft" refers many times to the possible effects an oil spill may have on specific targeted areas of study. An example would be "impacts on marine mammals".

EXPLANATION

The C.P. and DEIS refers to the possible effects at specific areas and does not account for the adjacent areas for potential effects. Put simply the migratory paths of the marine mammals and other resources are not listed. Bering Straits Native Corporation suggests that this concern be printed. In this same vein this "draft" does mention the possible effects on subsistence harvesting of marine mammals and other resources.

P.O. Box 1008 • Nome, Alaska 99762 • Phone (907) 443-5252 • FAX (907) 443-2985



FISHING

Subsistence and commercial fisheries are very important to this region. Although the proposal addresses this concern, Bering Straits Native Corporation stresses the role this plays in the development and production process. The fisheries are a life line to the shareholders of our region.

LAND USE

The "land use" sections of the proposal addresses this issue very aptly. However, the draft should list in detail the land ownership and points of contact.

RESPONSE TO POTENTIAL OIL SPILLS

Our concern is the technology between ice free and the frozen state (seas) to which the proposal addresses. Bering Straits Native Corporation suggests that the seasonal currents and other detail information be placed into the proposal.

The Bering Straits Native Corporation offers these comments in the light of giving regional and local input.

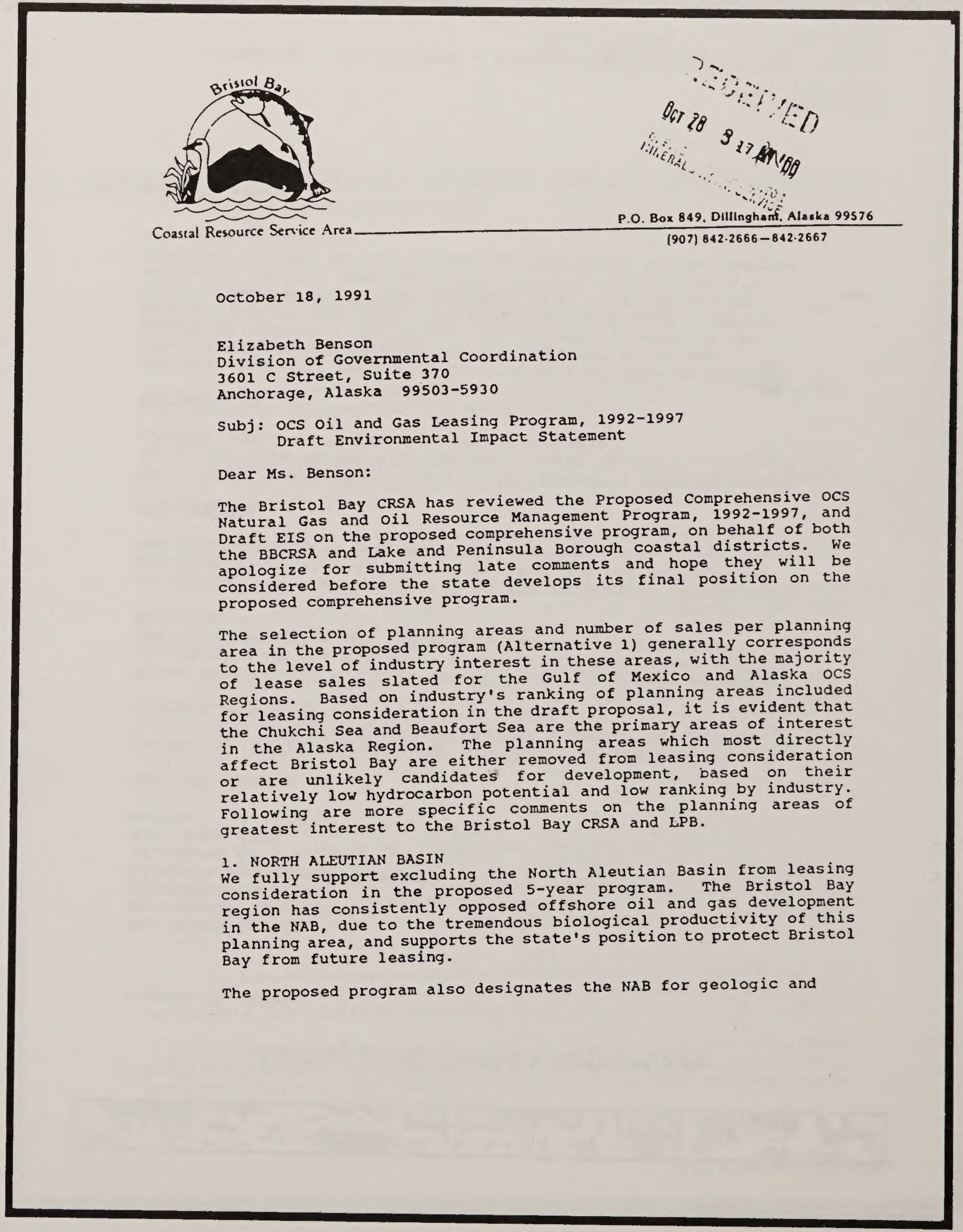
In closing we share with you the Bering Straits Native Corporation mission statement:

TO IMPROVE THE QUALITY OF LIFE OF OUR PEOPLE THROUGH ECONOMIC DEVELOPMENT WHILE PROTECTING OUR LAND AND PROTECTING OUR CULTURE AND HERITAGE.

Respectfully Submitted,

Guy Martin

Guy Martin
Land Manager



Bristol Bay
Coastal Resource Service Area
P.O. Box 849, Dillingham, Alaska 99576
(907) 842-2666—842-2667

RECEIVED
OCT 28 8 17 AM [illegible]
MINERALS [illegible] SERVICE

October 18, 1991

Elizabeth Benson
Division of Governmental Coordination
3601 C Street, Suite 370
Anchorage, Alaska 99503-5930

Subj: OCS Oil and Gas Leasing Program, 1992-1997
Draft Environmental Impact Statement

Dear Ms. Benson:

The Bristol Bay CRSA has reviewed the Proposed Comprehensive OCS Natural Gas and Oil Resource Management Program, 1992-1997, and Draft EIS on the proposed comprehensive program, on behalf of both the BBCRSA and Lake and Peninsula Borough coastal districts. We apologize for submitting late comments and hope they will be considered before the state develops its final position on the proposed comprehensive program.

The selection of planning areas and number of sales per planning area in the proposed program (Alternative 1) generally corresponds to the level of industry interest in these areas, with the majority of lease sales slated for the Gulf of Mexico and Alaska OCS Regions. Based on industry's ranking of planning areas included for leasing consideration in the draft proposal, it is evident that the Chukchi Sea and Beaufort Sea are the primary areas of interest in the Alaska Region. The planning areas which most directly affect Bristol Bay are either removed from leasing consideration or are unlikely candidates for development, based on their relatively low hydrocarbon potential and low ranking by industry. Following are more specific comments on the planning areas of greatest interest to the Bristol Bay CRSA and LPB.

1. NORTH ALEUTIAN BASIN
We fully support excluding the North Aleutian Basin from leasing consideration in the proposed 5-year program. The Bristol Bay region has consistently opposed offshore oil and gas development in the NAB, due to the tremendous biological productivity of this planning area, and supports the state's position to protect Bristol Bay from future leasing.

The proposed program also designates the NAB for geologic and environmental studies during the 5-year period. A number of information needs in the NAB have been identified and recommended for future study as part of the Alaska Regional Studies Plan. We recommend the state request that these studies receive priority attention and adequate funding by Minerals Management Service. The most recent list we have that shows the status of suggested studies was prepared in 1989 (copy attached) and may not be current.

2. ST. GEORGE BASIN
The St. George planning area is of obvious interest to our region given its proximity to Unimak Pass and importance of this area as a migration corridor for fish and wildlife populations entering and leaving the Bering Sea, including Bristol Bay. Under the proposed program, one sale for either St. George or Hope Basins would be considered in 1995. A decision on which planning area to select will likely be made during the Area Evaluation and Decision Process rather than in the Proposed Final Program.

Based on the 1:750,000 map of the area proposed for consideration of leasing in the St. George Basin, prepared by MMS in February 1991, no tracts would be offered within a 40 mile radius of Unimak Pass. This coastal buffer is consistent with the setback previously recommended by the state and affected coastal districts, and should be retained in the final comprehensive program.

However, we note that the proposed leasing area is located approximately 10 miles from the Pribilof Islands. This is considerably less than the 39 mile deferral area requested by the state for past lease sales and the 30 mile buffer requested in comments on the initial draft 5-year proposal. Morevover, the analysis of alternatives in the draft EIS on the proposed program fails to explain why this buffer was not considered. We recommend that the state again request deletion of tracts within a minimum 30 mile radius of the Pribilof Islands. The basis for this request could reference the draft EIS for Sale 89 which identified both the Pribilof Islands and Unimak Pass areas as having negligible hydrocarbon resources but extrememly high renewable resource values.

Thank you for the opportunity to comment. While our comments mainly address specific planning areas, we also support the new Area Evaluation and Decision Process. This process is touted as the cornerstone of the proposed comprehensive program and calls for increased consultation and coordination with interested and affected parties. Existing mechanisms, such as the regional technical working groups, are identified along with the option of creating new coordinating groups. In order to maximize state and local involvement, we believe a biological task force or coordination team needs to be formed for each proposed lease sale in Alaska.

Sincerely,

Susan Flensburg

Susan Flensburg
Program Director

cc: Bristol Bay CRSA Board
Glen Vernon, Lake & Peninsula Borough
Director, Minerals Management Service ✓

UNITED FOR BETTER DIVING
CENTRAL CALIF. DIVING COUNCIL

Comments on the Draft Environmental Impact Statement
& Proposed Program: OCS Comprehensive Program 1992--1997

Central California Council of Diving Clubs, Inc.

c/o Clay Phipps, P.O. Box 2278, Santa Clara, CA 95055-2278
408/247-3716

1991 October 29

Mr. S. Scott Sewell: Director
Minerals Management Service (Proposed Program)
Department of the Interior
ATTN: Program Development Office
Room 2525
1849 C Street, Northwest
Washington, District of Columbia 20240

Minerals Management Service (DEIS)
Department of the Interior
ATTN: Branch of Environmental Projects Coördination
381 Eldon Street
Herndon, Virginia 22070-4817

Sir:

The Central California Council of Diving Clubs (Cen-Cal) is a nonprofit educational and scientific organization that monitors the interests of approximately 40 recreational diving clubs in California from the Oregon border south through San Luis Obispo County. Our members, therefore, reside in and dive in ocean waters inshore from the Northern California, Central California, and Southern California Outer Continental Shelf (OCS) Planning Areas.

I have represented Cen-Cal in MMS's planning process since 1986. I have submitted many pages of formal written comments to MMS, most recently on April 26 of this year, including excerpts from my written comments submitted on August 27 1989.

It is obvious that MMS is waging protracted war against the critics of OCS leasing and development off the California coast, because--to be blunt--my detailed comments, along with those of other critics, especially the local governments of San Luis Obispo County, don't seem to have made a whole hell of a lot of difference.

I note that MMS has finally acknowledged that "Pt. Conception ... is widely recognized as a consistent and distinct faunal boundary separating the cold-temperate Oregonian Province north of the point from the warm-temperate Californian Province to the south" [p. III-137], yet MMS has retained the totally arbitrary divisions between the 3 OCS planning areas in California, and behaves as if it can perform and present valid environmental analyses while ignoring major oceanographic boundaries that MMS itself recognizes. MMS absolutely, positively, must redraw its planning areas to conform to these recognized boundaries, or it is likely to discover that this point will be used as a sufficient (as contrasted with "necessary") reason for the diving and fishing communities to totally reject all current and future alleged environmental assessments offered by MMS.

The presentation of the Pacific Region [III.C], especially the "Physical Environment" material, is unacceptably uneven. It appears to be a haphazard collection of short paragraphs, with no regard to uniformity of presentation. Even with some familiarity with the material, its presentation is difficult to follow.

Cen-Cal supports the objection by local governmental representatives in San Luis Obispo County to any new OCS leasing activity off that countiy's shores. Cen-Cal remains steadfast in its previously recorded opposition to OCS leasing in any counties north of SLO county, on the grounds that present OCS exploration and development technology is inadequate to extract mineral resources while adequately safeguarding marine life.

The DEIS introduces a new point of view regarding fisheries: that the damage likely from OCS development is less than that likely from other impacts on the resources. That specious line of argument may represent a new high-water mark for chutzpah on the part of MMS. Merely repeating that argument for multiple fisheries does not make it so; indeed, it appears to be setting fisheries up for an exercise in callousness typified by Alyeska Pipeline & Exxon's nonfeasance and misfeasance during the _Exxon Valdez_ fiasco.

I have made repeated attempts--bordering, after initial frustration, on the theatrical--to enlighten MMS on the recreational and commercial importance of abalones (_Haliotis_ spp.) in the OCS planning areas of California. I am left with no words appropriate to a G-rated DEIS that can adequately express Cen-Cal's aggravation at the the failure of MMS to properly recognize abalones as being among the "most important" shellfish in the Pacific region [p. III-136], and their first mention should not have been relagated to later pages [p. III-155]. The abalone fishery is probably the most important recreational fishery in Sonoma County, not just Mendocino and Humboldt Counties, further evidence that MMS's line between "northern" and "central" California planning areas was an exercise in gerrymandering. As with the oceanographic boundaries, MMS must rectify this glaring flaw immediately for MMS to give even the appearance of knowing what it is writing about.

Cen-Cal commends MMS for presenting the discussion on sea otters as a single population--albeit with nontrivial gaps--distributed around the North Pacific. This seems most consistent with the compelling taxonomic information available at present. This is not to suggest that sea otters do not deserve protection from oil spills, because Cen-Cal believes that they do deserve more GENUINE protection than they receive at the present time. The Final EIS should incorporate the consequences of the draft revised "Southern[sic] Sea Otter Recovery Plan" (rSSORP), which requires sea otter range expansion through California to the Oregon border, and will likely result in sea otter range expansion throughout the Southern California Bight, when assessing and presenting the influences of sea otter populations on planned OCS policy. Because oil spill risks to sea otters are used as the rationale for that draft plan, all impacts to fisheries--practical elimination of abalone, clam, crab, lobster, and urchin fisheries--should be categorized as impacts derived from OCS leasing and oil & gas transportation, and the EIS revised accordingly. In the mid-1970s, the sea otter population was not ESTIMATED to contain "nearly 1,600" animals; 1,560 were actually

OBSERVED And COUNTED in June 1976 [Wendell, Hardy, Ames: "A review of California sea otter (_Enhydra lutris_) census efforts", CDFG, mid-1980s draft]. Now that the joint CDFG & USFWS annual spring surveys have become an institution among the verious interest groups monitoring the population of sea otters in California, the less-frequent fall surveys are generally considered a poorer indicator. MMS should use the most current spring survey, in the context of prior spring surveys and survey conditions, to present a rough snapshot of the status of those marine mammals in California.

As stated in previous comments, Cen-Cal opposes the undertaking by MMS of another round of planning for OCS development, with its attendant threats to the ocean, when it is based on a long-awaited "national energy plan" that turned out to have followed industry's preference for emphasizing production of nonrenewable resources, with little apparent interest in significantly reducing the level of demand for those resources.

Respectfully submitted,

Clay Phipps

Clay Phipps
Director: Environment

cc: Congresswoman Barbara Boxer
Congressman Leon Panetta
Congressman Frank Riggs
Assemblyman Dan Hauser: Chair, Jt. Aquaculture and Fisheries Cmte.

CITIZENS ASSOCIATION OF BONITA BEACH
CABB
P.O. BOX 1821
BONITA SPRINGS, FLORIDA 33959

SEPTEMBER 16, 1991

OCT 21 1991

M/S DEBORAH L. TUCKER
SENIOR GOVERNMENTAL ANALYST
OFFICE OF THE GOVERNOR
THE CAPITOL
TALLAHASSEE, FLORIDA 32399-0001

DEAR M/S TUCKER:

RE: OCS COMPREHENSIVE PROGRAM
5 YEAR OIL AND GAS LEASING PROGRAM 1992-1997

THANK YOU FOR YOUR AUGUST 12 LETTER RELATIVE TO THE OCS PROPOSED PROGRAM FOR OFF-SHORE OIL/GAS LEASING PROGRAM FOR 1992-1997.

ATTACHED IS A COPY OF THE INPUT WE ARE SENDING DIRECTLY TO MMS IN WASHINGTON, D. C. TOGETHER WITH NEWS ENCLOSURES. IF THERE IS ANY NEW INFORMATION OR COMMENTS CONTAINED THEREIN WHICH YOU WISH TO INCORPORATE WITH THE GOVERNOR'S RESPONSE, FEEL FREE TO DO SO. IT IS MOST IMPORTANT TO US, AFTER OVER 5 YEARS DEDICATION TO OPPOSING EXPLORATION/LEASING/DRILLING OFF-SHORE OF FLORIDA TO DO EVERYTHING POSSIBLE TO PREVAIL WITH THE MMS OF THE DEPARTMENT OF THE INTERIOR TO PROTECT OUR SHORES.

PLEASE KEEP US BRIEFED, AND ADVISE OF ANY ASSISTANCE WE MAY BE. THANK YOU.

VERY TRULY YOURS,

Marjorie F. Ward

MARJORIE F. WARD
PRESIDENT

MW/DW:MFW

David W. Ward

DAVID W.WARD
VICE PRESIDENT

ENCS.

P. S. YOU MIGHT BE INERESTED IN KNOWING THAT WHEN IN WASHINGTON IN JULY WHEN OUR ASSOCIATION WAS A NATIONAL WINNER IN THE CIVIC CATEGORY FOR "TAKE PRIDE IN AMERICA", I HAD A BRIEF OPPORTUNITY TO TALK PERSONALLY WITH FRANK BRACKEN OF MMS IN THE DEPARTMENT OF THE INTERIOR AND SEC'Y OF THE INTERIOR MANUEL LUJAN. TO BOTH OF THEM OUR OBJECTIONS TO ANY FLORIDA OFF-SHORE DRILLING AS OUTLINED WAS EXPRESSED.

Comments Re: Proposal of Comprehensive Program 1992-1997 Outer Continental Shelf Natural Gas & Oil Resource Management

The following are comments from the Citizens Association of Bonita Beach--C.A.B.B. with regard to the Mineral Management Service (MMS) of the United States Department of the Interior proposal for a 5 year Off-shore gas and oil program 1992-1997:

Out input is being restricted to Off-shore of the State of Florida because our location is in Florida, although we are concerned with Off-shore drilling any place where the natural resources can be impacted. Frankly we feel that Florida Coastal areas can be affected by Off-Shore oil activities where they exist even today.

For your information a copy of a recent Fort Myers NEWS PRESS of September 1, 1991 is enclosed--the article "Oil Drilling in the Gulf--Scenario for a **DEADLY MESS**" was a front page lead and continued onto pages 4 and 5. You will note that the signers of this letter, as presiding officers of the Association in whose behalf this news article is being presented, were interviewed and expressed many of the philosophies that have been expressed in this report. You will find other additions in this input.

Our concerns for the state of Florida, with such a fragile coastline, would be the complete elimination of any exploration, leasing and drilling to protect the entire coast, and restriction on shipment of oil by tankers. Our dedication has not altered from previous input, but we do wish to assert ourselves with regards to the folowing which elaborate on the current petition form which has been distributed through our Association and signatures from throughout the United States have been obtained. To date over 21,000 such signatures have been forwarded to Washington, D. C. substantiating the feelings and dedication of not just our membership, which totals over 1,550, but those of fellow Floridians and people throughout the United States who come to the state of Florida for vacations or as part-time residents. This migration to our "sunshine state" is predicated on the amount of water which surrounds our state, our fantastic beaches, and the desire for all who come to enjoy them. This means that tourism, which has been our chief source of income for the state with an estimate of a total at least 55,000,000 people annually after the year 1995, is vertually the "economy of the State of Florida".

Pages III 40-41 Volume I Draft Environmental Impact Statement OCS Comprehensive Program 1992-1997 goes into detail as to the importance of tourism to the economy of the entire Gulf. It is deduced that almost 40 million residents have an interest in water related and water enhanced recreational activity with 2/3 of the shorefront composed of beach with one motorboat for every 20 people. Fourteen million people, or 35% of the Gulf States population live in coastal areas. This may be true on an average of all of the Gulf states **BUT** in Florida 85% of the population lives on or near the coast. Three of Florida coastal counties rank among the top in the Nation for public recreation expenditures in 1982 so "tourism is Florida's number **ONE** industry, and local governments spend considerable sums maintaining beaches."

According to a study by Research Data Service Incorporated (April 1990) relative to JUST Lee County, Florida on the Gulf of Mexico, estimated tourism industry impacts of a worst case oil related disaster:

1. An overall 31% decrease in visitor volume or nearly 1 million fewer visitors traveling to Lee County beaches.
2. A direct reduction of $392 million in visitor expenditures within the Lee County economy or an overall impact (direct and indirect) of $590 million in lost tourism-related expenditures.
3. A loss of 2.6 million room nights spent in local commercial lodging establishments and $2.7 million in local option tourism development tax collections.
4. Nearly $21.9 million in lost sales tax collections in Lee County.
5. Nearly 9,000 lost direct tourism-related employments within Lee County or a total loss of 12,300 jobs in tourism-related and supportive industries (direct and indirect).
6. More than $90 million lost in direct tourism-related wages, or a direct and indirect loss of nearly $140 million in wages earned in tourism and supportive industries.

With our phenominal growth in Southwest Florida the above figures would be much higher today or in the future in Lee County and all other counties in Southwest Florida as well as the balance of the state of Florida. (For example, people coming to Disneyworld etc. in Central Florida usually spend part of the time of their vacation at the beach, and if the beaches were ruined would cancel a trip even to the amusement park causing additional loss to tourism.)

Page 163 dated May 1991 in the July 1991 Proposal book reads as follows: "Studies will be developed to address the impacts of OCS oil and gas activities in the Eastern Gulf of

Mexico, especially the West coast of Florida. Future studies also should address the relationship between OCS oil and gas activities and the heavily dependent tourist/recreation economies of the area, especially Florida's West coast." You, yourself, have admitted that "tourism" is the economic backbone of the area which we represent, in particular Southwest Florida. A catastrophic spill would be responsible for causing the ruination of the entire Florida state economy.

Reference is made to your Draft Environmental Impact Statement I of the Comprehensive Program 1992-1997 completed July 1991 (Current Statistics Pages III-30 and 31): "Currently about one-half of the total U. S. population resides in coastal areas. The majority of the population in the Gulf of Mexico socioeconmic impact area resides in Florida with over 5.7 million inhabitants accounting for 40 per cent of the Gulf Coast population. The majority of the employment in the Gulf of Mexico socioeconomic impact area is attributed to Florida, with over 2.7 million employees accounting for almost 42 per cent of the Gulf of Mexico Region employment." Yet, practically NONE of this employment is oil/gas drilling related. Does this not prove to you that the economy of Florida is based upon tourism and the need to protect our natural resources?

(Please refer to corresponding numbers on our petition form attached for the following.)

1. A buffer zone of a minimum of **100** miles from shore should be established around the entire state of Florida. This is even too small if a spill should occur in times of a hurricane or other severe storms which this state is subject to with frequency. The speed with which a spill would be spread would be so rapid that it would be on shore before proper containment or protection could be implemented; hence the need for a wider buffer zone. Compared to the Alaskan affected shoreline of 1,300 plus miles which was mostly uninhabited and rocks to approximately 700 miles of the Florida Gulf of Mexico coast only, made up of tourist beaches, mangrove islands and estuaries, containment of a spill would be impossible just as in the case of the Valdez incident.

Exploration/leasing/drilling Off-Shore of Florida within 100 miles of its coastline has also been introduced and backed by the Governor of Florida Lawton Chiles, Senators Bob Graham and Connie Mack as well as Representative Porter Goss, to name only a few. These people care about Florida as do the members of the Association represented here and the General Public who live in Florida and visitors to Florida from all over the United States and the World.

We highly recommend that individual states (especially

Florida) should have jurisdiction (first approval and final say) on **ANY** exploration or leases for **200** miles off-shore. Any leasing should be combined with a long range energy conservation policy. Meanwhile substitute the use of natural gas for oil consumption whenever possible, particularly with large industrial users such as power generation plants, etc.

Emergency programs being pursued by the Coast Guard addresses only 1,000 bbls. and **UNDER** spills. A catastrophic spill of over 20 to 60 **MILLION** gallons could devastate Florida, its eco system not just for miles but for generations to come.

2. In June of 1990 President Bush directed that the 73 leases on temporary moratorium which would be expiring in 3 months (70 of which extend from the 10,000 islands south along the coast of Collier and Monroe County, Florida) would be placed on permanent moritorium to the year 2000. We feel that any cost to be reimbursed to the holders of these leases should be reimbursed by the Federal Government, not the state of Florida because Florida never agreed to this sale of #116 leases, and furthermore it was to the Federal Government that the Oil Corporations paid the $100 million (not Florida). If it be proposed to exchange these leases then we suggest they be placed in an area already full of oil drilling rigs rather than buying them back at an exhorbant charge.

3. The Deferred zone in the Eastern Gulf of Mexico extends westward to the 86th longitude; but north only to the 26th parallel. This is approximately at Marco Island in Collier County so the city of Naples known for its beaches, the balance of Collier County and all of Lee and Charlotte County (all famous for beaches, islands and their mangrove coast) are at risk. So as a bare minimum we request that the 86 degree longitude line be extended north to and including Parallel 28. (all prime tourist areas)

The Florida Middle Ground must also be protected. The present Deferred Area is less than 100 miles from shore from approximately the 27 latitude north to about the 28½ latitude. Then from the 29th latitude north and across the "Panhandle" section of Florida your proposal would have drilling within 10 miles of shore. There are in these areas islands, inlets, and beautiful sand beaches--protection should be afforded them. Our 100 miles buffer from shore should be adhered to which is NOT provided in your current proposed plan 1992-1997.

4. The Deferred Area, as proposed, expires in 2000. This should be changed to be **PERMANENT** regardless of any year. Only in event of a very severe or dire emergency to protect the shores of the United States should this be altered.

Reminder: The Federal Register Vol. 56, #148 of Thursday August 1, 1991 Notices (page 36835) under I. Comprehensive Program Approach Category 2 states: "Consider for MMS geologic and environmental studies but no leaseing (this category includes those areas which President Bush's announcement of June 26, 1990, stated would not have leasing before the year 2000.) We object to geologic and environmental studies in an area where the risk of development is too great which is definitely anyplace offshore of the State of Florida.

5. We have repeatedly asked for alternative methods of fuel being explored and considered so that the United States is not dependent on oil. At the time of the Mid-East Gulf crises and war, gasoline prices sored immediately before any oil shortage developed which indicates the oil interests are taking advantage of the United States consumer. We advocate that the United States not be dependent upon any outside interests; however, as long as oil can be secured from overseas at a price less than locally, why not save whatever resources we have for that "dire emergency" in the same manner as one would keep "money in the bank" to draw upon at that time. In the interim we should be working for less oil consumption and exploring as many alternatives with rewards to those who come up with viable ideas. Alternatives have been suggested for years, not all environmentally dangerous such as solar or other renewable energy resources, but oil companies for obvious financial reasons do **NOT** want alternatives and are being allowed to dictate to an entire nation.

6. Protection from oil spills from tankers has been a high priority in the state of Florida plus elsewhere. It is highly recommended by us that corridors off the coast of Florida where depth exists should be provided where there is no chance of tankers going into shallow water and grounding nor doing irreparable damage to our fantastic coral reefs. In addition the Federal government **MUST** make **ALL** tanker purveyors financially responsible for any spills that may occur--in "full" by insurance requirements or some other means. Proper inspection of these tankers must be periodically conducted. Double hulls should not just be explored but made mandatory. Pipe lines should be considered when transporting within the United States waters, but it should be mandatory that they be kept away from any shipping dangers. There are more spills from tankers, but pipe lines must be monitored as well with automatic shutdown devices etc.

We recommend that you reduce restrictions for inland pipe line delivery instead of barging or tankering over water. A mechanism should be provided whereby the Army Corp of Engineers can direct the use of the Air Force to airlift supplies for quick response to a major spill of 4.2 million gallons or more, from a central location. (Reminder: The Valdez spill was 10.9 million gallons and devasted 1,300 miles or more of shoreline.)

A copy of a lead item in the July 13, 1991 NAPLES DAILY NEWS entitled "Study says S. W. Florida vulnerable to Oil Spill" is enclosed. We should like to point out items to you which we have marked in yellow. Please note that from 1975 to 1990 there have been 32 major, 123 moderate, and 3,382 minor spills in Florida waters--and this without rigs near shore--isn't this enough tragedy being dealt to such a beautiful state? Please note further that these experts indicate the impossible job of clean up without ruination of our fragile coast. But in particular please take note of the **LAST SENTENCE**: "South Florida has never faced a catastrophic spill event--**YET**. But it could take 100 years or more to recuperate from a spill the size of the Exxon Valdez spill".

Our Association is not a branch of a national lobby nor is it affiliated with any major environmental group. As a matter of fact we do not consider ourselves as environmentalists but instead as conservationists--rather than the radical faction, we believe in the preservation of our natural resources for the benefit of future generations but also to be used, with proper care, by the current generations to the enjoyment of all concerned.

We should like to call to your attention that the individual County Comprehensive Plans for Florida are intended to provide more beach access and additional marine activities but with sound environmental practices. To do this makes leasing and drilling for oil off of our Florida coast inconsistent with State plans that the Counties must comply with. If oil is drilled off the Florida coast Chapter 187 of the Florida Statues would be comrromised or obliterated. The right of the Public to reasonable access to beaches (one of the dedications of our Association and the basis on which we were formed); water and land uses compatible with protection of sensitive coastal resources; protection of our marine fisheries and aquatic resources; avoiding exploration and development of mineral resources which threaten marine, aquatic, and estuarine resources; protection and acquisition of natural habitats and ecological systems; conservation of environmental, economic, aesthetic and recreation; prohibiting destruction of endangered species; and protection and restoration of ecological wetland functions to insure environmental, economic and recreational value--Chapter 187 of the Florida Statues would be compromised or eliminated if oil is drilled Off-Shore of the State of Florida.

WE MUST REMIND YOU ONCE AGAIN OF THE DANGERS POSED TO "ENDANGERED SPECIES": MANATEES, DOLPHIN, LOGGERHEAD TURTLES, ETC. THEN THERE ARE THE BIRDS WHICH MAKE THEIR HOMES IN FLORIDA: PELICANS, LEAST TERNS, SAND PIPERS, PLOVERS, SEA GULLS, EAGLES, OSPREYS, HERONS, ETC. ETC. AS WELL AS THE FISH. LEE COUNTY WHERE MANY OF OUR MEMBERS RESIDE HAS MORE ENDANGERED SPECIES THAN ANYPLACE IN THE WORLD, AND DURING WINTER MONTHS MORE ENDANGERED MANATEES COME TO LEE COUNTY IN SOUTHWEST FLORIDA THAN ELSEWHERE IN FLORIDA.

WHEN OIL DISSIPATES FOLLOWING A SPILL, SOME OF IT EVAPORATES AFFECTING OUR OZONE. AFTER ALL THE OIL IS TOXIC AND SO THIS TYPE OF POLLUTION COULD BE LETHAL TO BIRDS, MAMMALS, AND HUMANS.

VALDEZ IN ALASKA WAS A TRAGEDY BUT AT LEAST THERE WERE STONES TO TRY TO CLEAN THE OIL "GOOK" FROM; HOWEVER, FLORIDA CONSISTS OF MANGROVES WHICH ARE IN THE ESTUARIES AND THE BEGINNINGS OF OUR FOOD CHAIN--NO ONE HAS COME UP WITH A SOLUTION OF HOW TO REMOVE THE "GOOK" FROM THEM--THEY WOULD DIE.

QUOTING FROM YOUR OCS PROPOSAL JULY 1991 BOOK OF COMPREHENSIVE PROGRAM 1992-1997 , PLEASE SEE PAGES 162 AND 163. "NAS STATED THAT INFORMATION ON THE AT-SEA SEASONAL DISTRIBUTION AND POPULATION DYNAMICS OF SEA TURTLES AND MARINE MAMMALS IS NEEDED FOR THE WATERS OFF SOUTHWESTERN FLORIDA. DATA ON THE EFFECTS OF OIL ON SEA TURTLES IS FRAGMENTARY AND SHOULD BE ADDRESSED IN MORE DETAIL." ON ECOLOGICAL MONITORING: "IN THE EASTERN GULF OF MEXICO, MONITORING OCS EXPLORATORY ACTIVITIES MAY BE CONDUCTED IN AREAS WITH RARE, SLOWING RECOVERING OR OTHERWISE SENSITIVE COMMUNITIES OR HABITATS."

TELEVISION HAS BEEN QUITE GRAPHIC IN SHOWING THE UTTER WIPE OUT TO THESE BIRDS AND MAMMALS NOT JUST IN ALASKA BUT ALSO IN THE PERSIAN GULF--IT MAKES A PERSON "SICK TO THEIR STOMACH" TO SEE THE SUFFERING THEY ARE PUT TO PRIOR TO DEATH IN AN ATTEMPT TO FLY, CRAWL, OR EVEN EAT. ON ONE HAND ENVIRONMENTALISTS BEND OVER BACKWARDS TO PROTECT THESE CREATURES--FOR WHAT--TO BE DESTROYED BY GREED OF THE FEW FOR THE ALMIGHTY DOLLAR.

WE HAVE BEEN TOLD BY PEOPLE WHO ONCE WORKED IN OIL FIELDS IN OKLAHOMA AND TEXAS THAT THEY CAME TO FLORIDA BECAUSE THEY WERE UNEMPLOYED--NOT BECAUSE THERE WAS NOT MORE OIL IN THE GROUND BUT BECAUSE THE OIL COMPANIES CAPPED THEIR WELLS UNTIL SUCH TIME AS THE PRICE OF CRUDE ROSE SUFFICIENTLY FOR THEM TO MAKE A "KILLING" ON PRICE. MEANWHILE WE BUY FROM OVERSEAS.

WE HAVE IN OUR POSSESSION, SOME OF WHICH WERE PREVIOUSLY PRESENTED TO MEMBERS OF YOUR DEPARTMENT AT A PUBLIC HEARING IN TAMPA, FLORIDA LAST YEAR, TARBALLS WHICH COME FROM THE

WESTERN SHORE OF THE GULF OF MEXICO, A PLACE ONCE KNOWN FOR ITS BEAUTIFUL BEACHES, AN ISLAND CALLED PADRE, TEXAS. NOW SIGNS APPEAR IN HOTELS AND MOTELS THERE, AS THEY DO ON THE EAST COAST OF FLORIDA TO "DIP YOUR FEET IN A SUBSTANCE TO CLEAN THEM BEFORE COMING INSIDE THE BUILDING". OIL WHEN MIXED WITH SAND IS NOT REMOVABLE--AND YET MANY OF THESE TAR BALLS ARE CAUSED NOT BY "OIL SPILLS" AS SUCH BUT FROM LEAKAGE, AND DISCHARGE FROM BILGES OF LARGE BOATS, TANKERS, ETC. AS WELL AS OVERFLOW FROM WELLS IN AREAS--THEY FLOW WITH THE TIDE TO SHORE AND BECOME AN UNSIGHTLY PROBLEM NO ONE WANTS--LEAST OF ALL NOT THE BEACHGOERS NOR THE TOURISTS.

THE ONLY WAY WE HAVE HEARD OF REMOVING OIL FROM SAND WOULD BE COMPLETE RELOCATION WHICH WOULD RESULT IN SUCH A LARGE REMOVAL THAT EROSION WOULD SEEM MINOR BY COMPARISON. NO GOVERNMENT GRANTS COMBINED WITH PRIVATE DONATIONS OR TAXES COULD COVER THE COST OF SUCH A GIGANTIC PROBLEM. BEACHES ARE ALREADY ERODING AS A RESULT OF MOTHER NATURE AT AN ALARMING RATE DUE TO DEVELOPMENT BEYOND COASTAL CONSTRUCTION LINES--WHO WOULD PAY THE BILL TO CLEAN UP THE AREA?

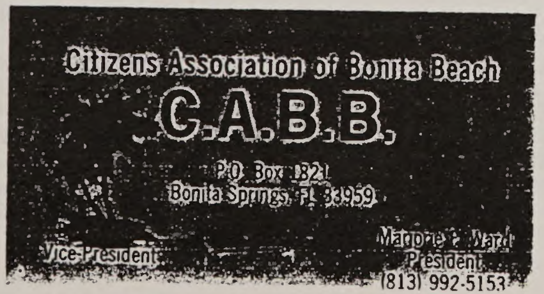
ON ARCHAEOLOGICAL RESOURCES, PAGE 162 OF YOUR JULY 1991 PROPOSAL: "RECENT DISCOVERIES OF SUBMERGED, PREHISTORIC SITES IN THE EASTERN GULF INDICATE THAT NEW PREDICTIVE MODELS MAY HAVE TO BE DEVELOPED FOR THIS AREA." LET US JUST PROTECT THEM BY NO DRILLING.

WE OFTEN REFER TO THE GULF OF MEXICO--SINCE WE RESIDE ON IT--AS THE "BIGGEST SWIMMING POOL THERE IS" BUT CONTRARY TO A PRIVATE POOL IT CAN NOT BE CHLORINATED. IN AN ATTEMPT TO KEEP OUR BEACHES AS CLEAN AND PRISTINE AS POSSIBLE OUR ASSOCIATION FOR OVER 6 YEARS (365 DAYS OF THE YEAR) HAS PICKED UP DEBRIS THAT BEACHGOERS AND BOATERS ALIKE UNTHINKINGLY CAST ASIDE--WE WORK TO KEEP OUR BEACHES PRISTINE LOOKING AND HAVE BEEN VERY GRATIFIED TO HAVE VISITORS FROM ELSEWHERE IN THE UNITED STATES COMPLIMENT US FOR OUR EFFORTS. WE HAVE BECOME INVOLVED IN ADOPT A BEACH, ADOPT A SHORE AND SINCE ITS INSTIGATION HAVE WORKED AS TEAM CAPTAINS IN THE NATIONAL/FLORIDA COASTAL CLEAN UPS WORKING TO KEEP OUR SHORES AS "PRISTINE" AS POSSIBLE. WE CAN TESTIFY THE AMOUNT OF DEBRIS THAT WASHES ASHORE FROM BOATERS--TRASH FROM RIGS OR TANKERS WOULD COMPOUND THIS ZILLIONS OF TIMES, AND ONE SPILL COULD DESTROY WHAT WE HAVE PUT OUR HEART AND SOLES INTO FOREVER. BY KEEPING OIL RIGS AWAY FROM OUR SHORES WE ALSO KEEP ADDITIONAL TANKERS AWAY BECAUSE IT IS FROM THE RIGS THAT TANKERS WOULD BE INCREASING TRANSPORTING--SO WE FEEL IT IS IMPERATIVE THAT YOU KEEP OUR SHORES FREE OF THIS DANGER.QUOTING FROM DR. H. MURAL CEKIRGE WHEN VISITING FLORIDA STATE UNIVERSITY "OIL SPILLS ARE A FACT OF LIFE. WHEN IT WILL HAPPEN, NOBODY KNOWS, BUT EVERYBODY KNOWS THAT SOMEDAY IT WILL HAPPEN. VALDEZ SPILL WOULD BE A PICNIC COMPARED TO WHAT WOULD HAPPEN IF THERE WAS A LARGE SPILL IN FLORIDA". THERE ARE ALREADY OVER 4,000 RIGS AND LEASE AREAS ALONE IN THE WESTERN AND CENTRAL GULF of Mexico which could contaminate the beaches and shoreline of Florida in the eastern Gulf. Even at this very moment the largest refineries in the world are located on shore in Texas and Alabama. Tanker shipping is continual and dangerous to the West coast of Florida.

Of the options for the Eastern Gulf of Mexico shown in your Comprehensive Program 1992-1997 July 1991 OCS, we should like to comment as follows:

> There needs to be a coastal buffer of 100 miles off the West coast of Florida--not just 30 miles because that is an insufficient distance to be able to restrain a spill (especially if there is a storm) before land is impacted.
>
> A Florida Middle Ground buffer must be established. We are talking about an area that is in urgent need of protection.
>
> Your #1 and #2 are completely inacceptable to protect what IS Florida--its shoreline, its beaches, its estuaries, bays, and rivers, the fish and manmals and reptiles that inhabit them (many of which are endangered species), as well as the birds of all types (including the bald eagle), the humans who have come to this area to enjoy what is listed above in appreciation or recreation, the tourism, (No. 1 industry of the State, and eventually the "economy")--at risk is the future of one of the most populated States in the Union--for the profit of the few already wealthy. It is not a matter of providing oil--or independence from imports. We have oil in continental lands in the U.S. -- let us first put a stop to exporting our oil from Alaska to Japan and set up a law that it must all be used at home; and we will never have an oil shortage.

Depending on whether it be an environmentalist or an oil company representative, estimates are from 3 to 18 day oil supply exists in the Eastern Gulf of Mexico at best. Not only would the rigs ruin our fantastic sunsets that people flock to the shoreline every night to enjoy, but pollution would be coming ashore just by virtue of the rigs being out in the Gulf even if no oil was produced. Our only solution is to STOP with exploration/leasing/drilling off-shore of Florida before it begins. If one's fellow man is of value--the state of Florida--the environment and economy, the cooperation of all is needed to protect them. Thank you.



Citizens Association of Bonita Beach
C.A.B.B.
P.O. Box 1821
Bonita Springs, FL 33959

Vice-President

Marjorie E. Ward
President
(813) 992-5153

Coalition to Restore Coastal Louisiana
5551 Corporate Blvd., Suite 3-E • Baton Rouge, LA 70808 • 504/926-0750

RECEIVED
OEAD
3

October 28, 1991

Ref: 821

Minerals Management Service
Environmental Projects Coordination Branch (Mail Stop 4320)
381 Elden Street
Herndon, VA 22070

RE: Draft Environmental Impact Statement for 1992-1997 OCS Leasing Plan

Dear Reviewer:

These comments on the Draft Environmental Impact Statement for the Mineral Management Service's Comprehensive Outer Continental Shelf Five-Year Leasing Program are designed to supplement the verbal comments made at the public hearing held by the MMS in Metairie on September 11. I make these observations and raise the following concerns on behalf of the Coalition to Restore Coastal Louisiana, an umbrella organization made up of over 120 member clubs, businesses, agencies and churches dedicated to reversing the shameful tide of coastal wetlands loss in the Mississippi River delta. Much of the pace of this loss is, of course, tied very intimately to the search for and development of energy both onshore and offshore in Louisiana.

We have no wish to stop oil and gas development in the offshore of Louisiana and we anticipate, as does the MMS, that most of the oil and gas produced from the OCS will continue to come from the huge Gulf region. At the same time we are alarmed to see the arrogant tone and lack of substance of the DEIS and the continued attachment of the MMS to the discredited approach of area-wide leasing for this one region of the OCS. At a time when Louisiana, together with the Department of Interior and an unprecedented alliance of other Federal agencies, is just starting on the most ambitious habitat restoration program in history, that mandated by the Coastal Wetlands Planning, Protection and Restoration Act (P.L. 101-646), we are concerned that MMS seems completely left out. How will area-wide leasing fit into the whole evolution of coastal restoration in Louisiana, both at the state and federal levels? This important issue is completely unaddressed by the DEIS and is, as the State of Louisiana has pointed out, completely inconsistent with the Coastal Zone Management Act. We ask that the EIS address the mechanism of coordination of leasing with the development of the Comprehensive Wetland Conservation Plan mandated under P.L. 101-646 for completion in 1993 with the goal of achieving no net loss of coastal wetlands resulting from development, including development consequent to this lease plan. It should be clear that such comprehensive coordination cannot be effectively carried out retroactively on a well by well basis at later stages.

From a socioeconomic perspective, it appears that MMS does not see its leasing policies as having any connection to the disastrous boom and bust cycles that have caused so much lasting damage to Louisiana's coastal communities and the natural resources that must sustain them as the oil business moves in and out. Damage to communities derived from poor planning and from destruction of infrastructure translates directly into environmental damage as most coastal communities in Louisiana are islands surrounded by wetlands. Their ability to meet water supply, waste treatment and disposal needs or even build schools are limited by their environmental setting and boom cycles create pressures that lead to unnecessary wetland destruction. Nowhere in the DEIS are the new needs for hazardous and solid waste management facilities and the enhanced pressures for increased wetland development discussed. I therefore reiterate here the request made during the public hearing that the EIS address at the least the solid and hazardous waste disposal needs that will be generated by this leasing plan.

So, we search in vain for the information we hope to find in this EIS to determine whether OCS leasing policies in the 1980's promoted the most destructive aspects of the bust. The experts in our state tell us there is a connection. MMS says that there is no data. Why not? How can MMS responsibly return to us head-in-the-sand a decade later when we're still cleaning up the mess in Louisiana from the last disaster? Is it really credible to believe that MMS could not have conducted the necessary studies to obtain this vital information before making what appears to be the same mistake twice?

Defenders of the area-wide approach say that planners in state and local government and the public at large have plenty of opportunity to comment on and substantively affect individual exploration and development plans when the details of these plans are filed later. Catch 22! Anyone who has looked at those plans knows that they are **pro forma** documents that refer back to the Lease Plan EIS, a document as deficient as the one we are critiquing here, for more detailed information. So we get into the circular loop with no new information generated while at the same time we have lost the ability to manage for or anticipate cumulative effects.

We ask that the MMS consider and evaluate rigorously in the EIS the alternative endorsed by President Bush on June 27, 1990 of returning to the pre-1980's approach of holding more narrowly focused lease sales for the Gulf of Mexico Region, as is now done for the remainder of the OCS.

Others at the public hearing objected to the minimalist approach that MMS takes in assessing the likely damages to coastal wetlands that will take place as a result of this lease sale. We who live in Louisiana have a much firmer grasp of the real damages than the abstractions portrayed in the DEIS. It occurs to us, however, that MMS' rosy scenario may actually be the result of a serious defect in the NEPA process rather than a selective reading of the data. Specifically, we ask for clarification about the planning horizon used by MMS to develop its portrayal of the consequences of the "proposed action." We note, for example, that on p. IV.D-184 it is stated that -

> "Four new pipeline landfalls are assumed to occur during the life of the proposed action.....Two new pipeline landfalls are expected in the Mobile, Alabama area and two along the Texas coast. No pipeline landfalls are projected for Florida. Production from offshore Florida will be transported to receiving facilities along the Louisiana/Mississippi/Alabama coasts by pipeline or shuttle tanker."

One is left with the absurd impression that the only potential for new pipeline landfalls in Louisiana would be associated with production from offshore Florida. Is the planning horizon associated with this five year plan a chronological five years or the lifetime of the leases that result from this plan? If it is actually construed to be confined only to the five years of the plan itself, then the integrity of the entire EIS approach adopted here is called into question. Since pipelines are associated with late-stage development, it is indeed

possible that no new pipeline landfalls associated **with this lease sale** would be constructed along the coast of Louisiana prior to 1997. The landfalls associated with the lease sale proposed here would take place **during the period of the next five year plan**. Conversely, pipeline landfalls constructed in the near-term will be connected to leasing that occurred prior to 1992, and were equally ignored when that lease plan was proposed. Again, we have a contrived circularity that appears intentional. The result is that the most environmentally damaging consequences of OCS development, the impacts associated with the modes of bringing produced oil, gas and brine to shore, are never given full consideration in any lease plan EIS. As a consequence, it is impossible to develop an appropriate mitigation strategy up front. Pipelines just come out of nowhere, from the gaping cracks between the plans.

We ask that MMS adopt the anticipated period of activity on a lease as its planning horizon for this lease plan and evaluate in this EIS all of the anticipated environmental consequences of activity on that lease throughout that period, whether it take place within five or thirty years, from exploration through development, including workover and abandonment. This will give us a far more comprehensive view of the real environmental consequences of OCS development and will eliminate the cracks through which most of the most damaging consequences now fall unconsidered.

We offer these comments in the hopes of improving the accuracy, comprehensiveness and integrity of the NEPA process that has led to this draft EIS. The Coalition recognizes the need for and desirabilty of properly mitigated OCS development. It is our hope that these comments will assist MMS in constructing a more realistic assessment of the damage to coastal communities and ecosystems in Louisiana associated with OCS development. This might then form a more credible basis for development of new strategies to mitigate past damage and prevent unnecessary future shocks to the environment and economy of coastal Louisiana.

Sincerely,

G Paul Kemp

G. Paul Kemp, Ph.D.
Science and Technology Director

Environmental Services
■ 805/544-1777
Recycling Services
■ 805/543-4296

45 Prado Road
P.O. Box 1014
San Luis Obispo
California
93406

EcoSlo
Environmental Center
of San Luis Obispo County

October 21, 1991

Director, Minerals Management Service
381 Elden Street
Mail Stop 4320
Herndon, Virginia 22070-4817
Attn: Ms Debra Purvis

Dear Mr. Sewell:

The attached enclosures are the Environmental Center Of San Luis Obispo (ECOSLO) response to the Minerals Management Service Comprehensive Program 1992 - 1997 Proposal of July 1991, the Comprehensive Program 1992 - 1997 Draft Environmental Impact Statement, and the MMS Pacific Region Comments to the Governor of California, and San Luis Obispo County responses to MMS of April 24, 1991.

First, we demand an EIS on seismic testing in the federal waters of the Santa Maria Basin and the accompanying damage caused in the adjacent state waters. We strongly demand that the EIS be directed by an outside agency, such as NOAA. The findings of this EIS will be the basis for other EIS's around the country.

Second, we urge the President to create a meaningful national energy policy that places substantial conservation of fossil fuels and the creation of alternative and sustainable energy sources as the top priority. We urge the return of meaningful government supports and research for sustainable, non-polluting energy. We urge that such an energy policy also brings to a halt the production of nuclear energy. The federal government energy policy, by failing to call for government participation in research, development and application of alternative and renewable energy sources, aids and abets the price-fixing from the Middle East.

Third, we demand that no further leasing occur in the Santa Maria Basin until, 1) NOAA's new SEL process is complete, and, 2) Congressman Leon Panetta's bill, H.R. 3099, to designate the Central Coast National Marine

Fourth, we have urged the governor of California to put the MMS on notice of a possible law suit if MMS continues to inadequately address his comments, the comments of other state and local governmental agencies and bodies, citizen organizations, and individual citizens.

Fifth, we demand that the Santa Maria Basin be separated from the Southern California Planning Area and be placed in the Central California Planning Area. MMS has failed to live up to its promise that if the Basin was included in the Southern California Planning Area that there would be concentrated review of its environmental characteristics. The impacts to the Basin and adjacent coastal communities are continually overlooked.

Sixth, we demand that the EIS for the Pacific Region focus on the Santa Maria Basin and the Santa Barbara Channel for the 87 proposed leases and not the entire Pacific Region. The lease sales will not occur elsewhere in the region.

Seventh, it is our studied opinion of the documents that MMS has presented facts based upon political science. Political science, as we define it, is the manipulation of scientific data and information for a political agenda.

Eighth, we find MMS's equating an educational forum sponsored by the local League of Women Voters with a MMS formal hearing irresponsible and reprehensible. Like Fort Bragg in 1988, several hundred speakers were not allowed to testify in Santa Maria on September 18, 1991.
If you or any of your staff have any questions, please call me or Karl Kempton, Principal Analyst, at 805-544-1777.

Sincerely yours,

Kurt Kupper, Director

The following is a general outline of shortcomings of the **Comprehensive Program 1992 - 1997 Draft Environmental Impact Statement.**

1. The overall presentation of environmental information regarding the Southern California Planning Area, in general, and the Santa Maria Basin, more specifically, by MMS in this EIS is extremely lacking. Considerable data and information for the region and the Basin are available to specialists, academia, MMS and the public. The previous 15 years of state, county and citizen comments have been ignored.

2. A possible lease sale will generate seismic testing in the Basin. The negative environmental consequences of seismic testing are: geologic survey noise, fish dispersal and catchability, fishing disruption and gear loss, impacts on fish eggs and larvae, impacts on microscopic life forms, impacts on sea mammal behavior, and impacts on other sea life forms. An environmental impact statement specifically addressing the issue of seismic testing must be, and this cannot be stressed enough, mandatory.

3. The area known as the Santa Maria Basin is located between Point Conception and Point Sur. While being found in the southern portion of the Oregonian Oceanographic and Meteorological Province, it is called a meteorological and oceanographic province transition zone of the Oregonian and Californian Provinces. As such, the ecosystem of the Basin contains resident and migratory species and communities which overlap both provinces making for a very rich environment. Its outstanding characteristics have prompted the County Board of Supervisors to pursue a designation of the Central Coast National Marine Sanctuary off our county.

4. A description of the oceanographic features of the Santa Maria Basin do not appear. These characteristics are complex and require extensive study. The quality of marine water for the Basin is not discussed. The existence of three seasonal upwellings and one major persistent upwelling in the Basin are not acknowledged by MMS. The Morro Bay Estuary does not appear in the discussion. A discussion of the complex relationships of the various currents, upwellings, onshore and offshore geography, meteorology and wetlands is obvious by its absence.

5. A thorough understanding of the sea mammal and sea bird population shifts and increases is lacking. The gray whale has been found to be a bottom feeder in Northern California. Side-scan sonar/acoustic surveys by USGS should be extended to include the Santa Maria Basin because of the known world-class benthic communities located in the Arguello Canyon. And, inadequate discussions exist concerning other endangered and threatened whale and dolphin numbers and behavior in the Basin. There is no discussion of the fact that there has been a significant increase in sea mammal and sea and shore bird species' populations in absolute numbers and in percentage of total California coastal populations.

6. Though an extensive discussion on coastal wetlands is found in the EIS along with a list along the Pacific Coast, there is no mention of Morro Bay Estuary, the Santa Maria River Estuary and other Santa Maria Basin wetlands. Morro Bay is about to become a National Estuary within the EPA program.

7. The actual relationship of the sandy beach and rocky intertidal habitats lack discussion.

8. Linking San Luis Obispo County to a description of Southern California clearly underscores the fact that MMS fails to understand the actual socioeconomic setting and characteristics of San Luis Obispo County.

9. No mention is found in this section of the Chumash culture in the Basin and Channel nor the fact that at least 9,000 years of continuous occupation has been recorded for several coastal sites.

10. The pristine viewsheds of the coastal area of the Basin, that in part attract millions of visitors a year to the area and who in turn add to the billion dollar per year tourism industry of the county, go unmentioned in the EIS.

11. There are no existing processing or transportation facilities in San Luis Obispo County to serve offshore development.

12. There is no existing oil spill recovery technology to clean an accident in average Basin sea conditions.

EDC
ENVIRONMENTAL
DEFENSE CENTER

October 29, 1991

Mr. Barry Williamson
Minerals Management Service
(MS-4230)
1849 C Street,
Washington D.C. 20240

RE: EDC Comments to Proposed 5 Year Plan

Dear Mr. Williamson:

Please find the comments of the Environmental Defense Center to the proposed MMS 5 year plan. Pursuant to my conversation with Ms. Pat Wilkerson of the MMS Public Information Office in Washington D.C., these comments will be considered timely if postmarked by October 29, 1991.

Please contact me if there are any problems with the receipt of these comments. I look forward to their full consideration and appropriate responses.

Sincerely,

Marc Chytilo
Chief Counsel
Environmental Defense Center

encl.

EDC
ENVIRONMENTAL
DEFENSE CENTER

October 29, 1991

Mr. Barry Williamson
Minerals Management Service
(MS-4230)
1849 C Street,
Washington D.C. 20240

BY MAIL AND FAX

RE: Comments on MMS 1992-1997 Proposed Program: Decision Document; Draft Environmental Impact Statement; Outer Continental Shelf Lands Act Compliance

Dear Mr. Williamson:

Please accept the following comments from the Environmental Defense Center, a public interest, non-profit environmental law firm located in Santa Barbara, California. The EDC has been active in numerous oil issues in our region on behalf of our membership, several citizens and environmental organizations and the community at large. These comments generally and specifically address the components of the proposed action that affect the Santa Barbara Channel and Santa Maria Basin areas, however wherever applicable, MMS should consider these comments made to all regions where OCS development is being considered and reviewed.

INTRODUCTION

It appears, from all of the available documents and information that EDC has been able to obtain, that MMS is improperly proposing to offer a series of OCS tracts for lease in the Santa Barbara Channel and the Santa Maria Basin. For the numerous reasons contained herein, we object to that proposal and request that the 87 southern California tracts in the Pacific Region proposal be deleted from further consideration.

It is clear that since the enactment of the 1978 amendments to the Outer Continental Shelf Lands Act (43 U.S.C. § 1331 et seq., hereinafter "OCSLA"), the MMS has gotten steadily more skilled at preparing a program which appears on the surface to satisfy the criteria set forth in the statutes and relevant cases, but which in no sense represents a good-faith consideration, analysis and discussion of all of the information necessary to make an informed decision. This is particularly true of the 1992-1997 Proposed Program.

One of the more striking aspects of the Proposed Program is the difficulty of understanding it. The sentences are often long and unclear, the organization is muddled, and there is little actual analysis. For example, the discussion under Part

II of the Decision Documents, entitled 'Analyses', consists essentially of general statements about methodology followed by references to tables which purport to justify the conclusions reached. This is not analysis. Since the purpose of providing these preliminary program documents is to enable decision-makers and the ordinary public to understand and comment on the proposed program, they fall far short of what is required in this case. The documents should be rewritten more clearly to allow laypeople to understand and comment on the methods used by the MMS to reach its conclusion that the benefits of oil drilling in these certain areas outweigh the costs.

In any event, since the Proposed Program reflects few, if any, of the comments which we (and other commenters) submitted regarding the Draft Proposed Program, the following comments will restate in large part our previous comments contained in our letter of April 24, 1991.

LEGAL INADEQUACY OF THE PROPOSAL

1. LEASING PROGRAM COORDINATION WITH NATIONAL ENERGY STRATEGY

The OCSLA mandates that the MMS' OCS lease proposals meet the nation's energy needs for a five-year period. While the Bush administration recently released a so-called "National Energy Strategy", that strategy's reliance upon substantially increased domestic oil production is subject to severe modification in Congress. The OCS proposal should await approval of the National Energy Strategy before committing OCS resources that may be better preserved for the future. As various Bills are currently working their way through Congress to authorize a national energy plan, waiting until the actual shape of the National Energy Policy is defined is a prudent step.

Further, MMS has ignored the effect that air quality planning under the 1990 amendments to the Clean Air Act will have upon energy consumption patterns and many assumptions relied upon by the 5 year plan. States finally have some level of confidence in the eventual regulation of OCS air pollutant emissions, now that EPA has assumed authority to regulate these sources. MMS' failure to regulate OCS emissions over the past decade is deplorable, and even today MMS refuses to recognize OCS emissions as a significant factor in onshore air quality. This arrogance and refusal to objectively view the facts and evidence deprives MMS of any shred of credibility and seriously jeopardizes the legal justification for any individual lease sale.

Lastly, OCSLA requires MMS to plan in five year increments for that period following its approval. § 1344. MMS admits throughout its "analysis" that no activity is likely to occur pursuant to this proposed action until 1996. Since this plan, as proposed, fails to accomplish its statutory purpose of "meet[ing] national energy needs for the five-year period following its approval or reapproval", it is legally defective.

2. CONSIDERATION OF § 1344(a)(2) FACTORS REGARDING THE PACIFIC REGION

Section 1344(a)(2) of the OCSLA requires that decisions regarding the timing and location of exploration, development and production of oil and gas regions shall be based upon consideration of a number of specific factors. All of these factors must be duly considered, and all of the appropriate analysis must be performed at this time; deferral of any portion of the necessary analysis is inappropriate (California v. Watt (Watt I), 668 F.2d 1290, 1305 (D.C.Cir., 1981). Indeed, much of the required analysis can **only** be performed at this stage in the OCS development process. Id. 688 F.2d at 1306.

In particular, the Secretary is required to make a comparative analysis, as a programmatic matter, where it is appropriate for our Nation to seek its oil. Among the many factors the Secretary must consider are relative impacts, a comparative risk analysis, and a consideration of which areas have already had their fair share of OCS impacts, and for whom no additional OCS development is equitable. Id. This analysis is to be based upon "the best information available". Id., 688 F.2d at 1307

The § 1344(a)(2) factors of concern in this proposed action are:
(A) existing information concerning the geographical, geological, and ecological characteristics of such regions;
(B) an equitable sharing of development benefits and environmental risks among the various regions;
(C) the location of such regions with respect to, and relative needs of, regional and national energy markets;
(D) the location of regions with respect to other uses of the sea and seabed, including fisheries, navigation, existing or proposed sea lanes, potential sites of deepwater ports, and other anticipated uses of the resources and space of the outer Continental Shelf;
(E) the interest of potential oil and gas producers in the development of oil and gas resources as indicated by exploration or nomination;
(F) laws, goals and policies of affected States which have been specifically identified by the Governors of such States as relevant matters for the Secretary's attention;
(G) the relative environmental sensitivity and marine productivity of different areas of the outer Continental Shelf; and
(H) relevant environmental and predictive information for different areas of the OCS.

A. Adequacy of Programmatic Review

As a threshold matter, the Leasing stage is the only time at which most of the above-stated factors can be comparatively analyzed; once a leasing decision is made there is virtually no opportunity to revisit most the § 18 factors. The leasing stage is truly the time for programmatic review and a determination of the best way to accomplish the goal of the Act while addressing all of its relevant factors.

Unfortunately, MMS has not utilized this level of review to perform a programmatic analysis.

B. Arbitrary Use of "Inherent Limitations"

In the § 18 analysis, the Secretary is required to consider all of the § 1344(a) factors and balance them to the maximum extent feasible. Rather than perform a good-faith evaluation as described in Watt I, MMS has instead claimed the inability to do so based upon a series of "inherent limitations" that purportedly preclude any meaningful analysis. DD at 26.

In this regard, MMS has failed miserably to perform a reasoned programmatic analysis utilizing the factors described by Congress. MMS' reliance upon the "inherent limitations" which create "substantial uncertainties" is unfounded. These uncertainties are engaged to obfuscate the consideration of § 18 factors and rob the requisite "balancing" of any substantive basis. The Secretary declines to engage in any matrix or analysis of the relative impacts and significance of various areas, relying instead upon external criteria and political factors.

MMS owes a duty to the affected public to actually balance the factors involved and not rely upon completely vague, self-imposed limitations.

Our analysis of the Proposed Program's treatment of the above factors with regard to the leasing proposed for the Southern California Planning Area is as follows:

(A) Existing information concerning the geographical, geological, and ecological characteristics of such regions

Southern California generally and Point Conception specifically represents a specific transition zone between the two major biogeographic regions, the Oregonian Province to the North and the Panamanian province to the South. This transitional nature of the ecosystems creates rich habitat, both marine and terrestrial, which are particularly valuable and rich from a biological perspective. The proposed plan fails to fully develop the role that the transitional zone plays in the life-cycles of many species endemic to each individual zone. Since the Secretary is required to consider this as a factor in any decision to proceed with leasing, it would appear appropriate that these issues be developed now, rather than later when leasing options will be constrained by earlier decisions.

While some studies pertaining to this region are cited in the Decision Documents and Draft EIS, it is nonetheless clear that far more information is necessary to understand, consider and balance the geographical, geological, and ecological characteristics of this region against those of other areas.

This conclusion has also been reached independently by the National Research Council, an arm of the National Academy of Sciences. This agency reviewed the adequacy of information for OCS drilling decisions off of California and deemed it inadequate.[1] In fact, MMS' own Decision Documents are replete with references to

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[1] "The Adequacy of Environmental Information for Outer Continental Shelf Oil and Gas Decisions: Florida and California", National Research Council, National Academy Press, 1989. Since this document and project was sponsored by the President's Outer Continental Shelf Task Force, MMS has ample access and thus it is incorporated into this comment letter

studies that are ongoing or are scheduled to be carried out in the future (few of which are actually named), implicitly recognizing the dearth of "existing information", yet these documents comprise the basis for MMS' oft-stated finding in both the environmental review documents and the Decision Documents that no evidence of significant impacts exist. MMS' may not purposefully insulate itself by remaining ignorant of adverse environmental impacts and simultaneously assert that it has considered all of the relevant factors in conducting its balancing required under § 18, yet this is what MMS' purports to do. We are aware that criterion (A) requires only "consideration of. . . existing information", but it is nonsensical to think that the law permits MMS to blithely proceed with lease sales once it is established by an authoritative report that the existing information base is at least partially inadequate.

Moreover, what information there is indicates that this area is very sensitive to OCS activities, and only the most obvious ecological changes will be detected. The biological (and commercial) value is due to strong local currents, fragile benthic ecosystems, varying benthic characteristics (hard and soft bottoms), and other geographical, geological and ecological characteristics that make short term monitoring of environmental changes difficult to detect. The problem is exacerbated by MMS' refusal to acknowledge that changes in water chemistry, for example, leads to an imbalance in the natural system that will eventually be corrected for, even though there has not been a major impact observed to date.

It would appear that MMS is intentionally preventing the completion of studies that disclose potential adverse environmental impacts that could affect the Secretary's required balancing of factors. Nearly all technical reports evaluating specific environmental impacts of OCS activities conclude not that there are no impacts, but either that the existing information is inconclusive, that the study was scoped in such a manner as to prevent a finding of significant adverse environmental impact, or that additional study is necessary. Further, the Secretary must consider the impact that the MMS' financial sponsorship has upon a researcher's findings and the way in which a conclusion is drafted. In evaluating the information available to the Secretary regarding environmental impacts, additional weight should be afforded to researchers who are completely independent from MMS. For example, the National Academy of Sciences reaches drastically different conclusions regarding the adequacy of environmental information and the overall impact of OCS activities from the conclusions reached by MMS staff. See "The Adequacy of Environmental Information for Outer Continental Shelf Oil and Gas Decisions: Florida and California" NRC, NAS, 1989.

The record in this case reflects a bias towards undue reliance of inconclusive studies that find "no evidence of an impact" and against any study which finds otherwise. For example, notes on page 10-C-41 of the Decision Documents that "MMS is currently conducting a long-range study to determine the effects of exploration, development and production at two platforms in the Santa Maria Basin, off California. . . . as of this date, no significant impacts have been identified." In fact, MMS is sponsoring a study of cumulative impacts that discloses substantial changes in water chemistry, but which is self-admittedly inconclusive regarding impacts to several marine species. MMS would apparently only admit a significant

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by reference.

impact if an entire area were made barren by OCS activities, which logically wouldn't pose an impediment to further OCS drilling and no species would remain to be affected.

MMS colors their interpretation of the evidence by citing an earlier, and more favorable, version of the same report in the references attached to Appendix 10. Inexplicably, a newer, less conclusive version of the report was not cited and thus apparently was not utilized by the Secretary in reaching his decision regarding the proposed program. This omission puts the MMS' credibility in serious question, taints the entire decisionmaking process, and cannot help but lead one to wonder whether other studies are out there which have identified serious impacts resulting from drilling or exploration, but which have been quashed before publication or intentionally ignored.

(B) an equitable sharing of development benefits and environmental risks among the various regions

In authorizing the Secretary to select portions of the national resource base to make available for leasing and development, Congress specifically recognized the impacts to onshore communities which are associated with OCS development. Congress directed the Secretary to consider these factors and the courts have interpreted this language to require the Secretary to "base the leasing program upon the results of his consideration of those factors." California v. Watt (Watt II) 712 F.2d 584 (D.C.Cir., 1983.)

a. Existing development is extensive

It is universally recognized that the southern California region, in particular the Santa Barbara Channel, is already the site of extensive OCS activity, and that significant adverse environmental impacts have been visited upon onshore communities from past activities. Currently, nearly one hundred leased but undeveloped OCS tracts are in various stages of planning and review in the Santa Barbara region. In performing the statutory analysis, the SID fails to evaluate the development benefits and environmental risks from that impending development in conjunction with existing OCS, tidelands and onshore oil and gas development.

The heavy burden that the Santa Barbara region has borne for decades is a matter of common knowledge, judicially recognized by the District of Columbia Circuit Court of Appeals in Watt II, 712 F.2d at 599 ("the inequitable sharing of environmental risks which presently exists because leasing activity is primarily limited to the proven areas of the Gulf of Mexico and Southern California"). Both the House of Representatives and the Senate have noted the intensity of OCS development off the coast of southern California, and especially the Santa Barbara Channel. See H.R.Rep.No.590, 95th Cong., 1st Sess. 74 (1977); S.Rep.No.284, 95th Cong., 1st Sess. 49 (1977).

Indeed, even the MMS concedes in a roundabout way on page 16 of the Summary and Decision that the risks of development outweigh the benefits for OCS regions, and states that the DOI has been requested by the President to "develop a proposal for impact assistance to provide coastal communities with a greater share of the revenues resulting from offshore oil production." Unfortunately, that

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"compensation" fails utterly to address adverse environmental burdens, and instead only offers money for expenditure by local government. No nexus between the impact and the exaction is stated, (see generally Nollan v. California Coastal Commission (1987) 483 U.S. 825, 107 S.Ct. 3141, 97 L.Ed.2d 677), leaving oil developers with the option of simply declining to make payments to the local government, forcing the locals to fight in court for MMS' money.

Nevertheless, the MMS proposal fails to address this imbalance through any sort of equitable sharing of benefits or risks. How does this plan spread the risks of environmental impairment, other than the fact that Santa Barbara's economy is highly dependent upon visitors, who presumably would share our misery, (but probably not their dollars), in the event of environmental impairment? In what way do the people and habitat of the Santa Barbara and San Luis Obispo regions equitably share the burden of oil development with other communities? We already have thousands of oil wells all around the area. We constantly are on guard for pipeline leaks along our roads and near our homes and abandoned equipment protruding from the surf zone at the beach. We are constantly contending with foul smelling emissions from the platforms and other processing facilities, massive flares visible from 20 miles distant, constant exposure to contaminated air, routine "minor spills" always described as "insignificant when compared to natural seeps", occasional major oil spills, tanker accidents, obstreperous oil company officials, and arrogant bureaucrats. Oil development has transformed rural coastal Santa Barbara County into an industrial zone, never to be returned to a natural or pleasant state.

b. Environmental risks are understated

In performing the § 1344(a)(2)(B) analysis, MMS is guided by the decision in Watt I, where the Secretary's analysis was faulted for looking generically at only the risks associated with oil spills without examining an area's relative sensitivity to an oil spill. Id., 688 F.2d at 1307-1308. The court faulted the Secretary interpretation of "environmental risks" as unduly narrow, and defined a risk to mean "exposure to the chance of injury or loss". Id.

Fortunately, the concept of risk analysis has been refined somewhat, and we know to look at both the likelihood of an event and the severity of the event. In Watt I the court noted that the Secretary failed to incorporate an impact factor that considered the biological\environmental **sensitivity** of the area receiving the spill. Id., 688 F.2d at 1308.

Unfortunately, the Secretary has repeated his failure. Throughout the SID, adverse environmental impacts are systematically understated, apparently based on a 1975 mentality, e.g., since the 1969 Santa Barbara oil spill is not apparent today, there are no long-term impacts.

i. Marine and benthic impacts are not fully understood or quantified

In fact, we cannot say this conclusively, since there was no comprehensive inventory of marine and benthic biota present before the 1969 oil spill. There is no comprehensive inventory of marine and benthic biota present in the Santa Barbara

Channel even today. However, there are indications that the biology is shifting. Up until a few years ago, Pacific Grey Whales would pass right along the Pacific coast past Santa Barbara, converting every little overlook and ocean viewspot into a whalewatching vantage for residents and tourists alike every Spring and Fall. Now the Whales carefully avoid the coast, staying out in the Channel or going the long way around the Channel Islands. MMS will argue that the Whales are fine, just adapting to their environment, but the changed pattern represents a response that cannot be ignored.

There are numerous other indicia that the balance of the Channel and surrounding waters has shifted. MMS is currently engaged in a multi-year monitoring analysis of the California OCS program, with substantial attention paid to the Santa Barbara Channel. California OCS Phase II Monitoring Program, (herein "CAMP"), MMS-90-0055, Three Year Annual Report, Volume I, Contract No. 14-12-0001-30262. This study, not yet completed, reports increased levels of heavy metals such as cadmium, chromium, copper, and barium in deposited sediment from several platforms in the Santa Barbara Channel as a result of drilling activities. The study's authors could not make a definitive conclusion regarding long-term adverse environmental impact, but opined that areas of extensive well installation could cause significant cumulative impacts from both blanketing the sea floor with sediment and from exposure to elevated levels of toxic heavy metals.

The federal government attempted to introduce the California Sea Otter to the Channel Islands, and created a disaster. Originally a colony was transported to Nicholas Island with assurances that it was too far for them to return to their original areas off the central coast. these predictions were wrong, and transplanted Sea Otters have been sited on other Channel Islands and back in their native range. This experiment brought Sea Otters to areas where they were not a part of the ecosystem, disturbing a delicate natural balance. What impacts have occurred has (conveniently) not been documented, nor should much be apparent, even to trained wildlife biologists. The role of a single animal in an ecosystem can be insignificant or great, depending upon conditions. For example, populations of feral pigs on several of the Channel Islands were stable at less than 100 individuals until a new gene pool was recently introduced. Now the federal government is spending hundreds of thousands of dollars to address the feral pig "problem". Nature is a delicate balance that can easily be disturbed. OCS activities have been and will continue to disturb the balance; eventually resulting in significant, evident changes to native ecosystems. None may have been detected yet, but it is only a matter of time and numbers, eventually the impacts will become evident, but at that time it will be impossible to reverse the trend.

ii. Air quality impacts are inadequately discussed

The Secretary has, inexplicitly, improperly ignored air quality impacts to the onshore environment in southern California, in spite of the reality that the area has some of the worst quality air in the nation. MMS cursorily notes that "it is expected that EPA will delegate responsibility and authority" for air quality planning and enforcement to local governments. IV-D-42. This argument assumes quite a bit, as does the entire air quality analysis. EPA has, in fact, delayed the development of these regulations, and it appears that only court action will accomplish speedy action by EPA. MMS assumes that onshore regulations will effectively regulate all

OCS sources, an assumption undermined by OCS operators who have contested the very premise that onshore regulations have equal effectiveness offshore.

MMS also assumes, incorrectly, that simple emissions offsets reduce air quality impacts to zero. This simplistic analysis ignores the ozone formation potential[2] of different types of air pollution emissions. Specifically, since diesel emissions are the most common OCS source and have ten or more times the ozone formation potential as many onshore sources, simple emissions offsets in no way assure the negligible impacts asserted by MMS. Exhibits 4-6 are technical documentation supporting the need for a more detailed analysis of the relative ozone formation potential of various constituents commonly found in the OCS.

MMS repeatedly concludes that OCS emissions will have only a negligible impact to onshore ozone concentrations, but nowhere are raw emissions estimates tabled and compared with existing OCS emissions. Cumulative impacts are ignored. Onshore emissions inventories are displayed, and where Santa Barbara County has evaluated total current OCS emissions inventory, the numbers are drastically different from those predicted by MMS. Exhibit 2.

MMS fails, throughout the SID, to acknowledge that the national ambient air quality standards are health-based standards which are set to protect the average individual. See 42 U.S.C. § 7409 (2). MMS relies upon federal regulations the define "non-attainment" as requiring multiple exceedences, however adverse health impacts may and typically do occur even without a technical violation Further, the DEIS states that the Oregon coast has some of the best air quality in the nation, but they also have some of the worst, believed due in large part to woodburning. MMS should base its conclusions on empirical evidence and a literature search, not just "generally held opinions". DEIS at III-112.

MMS incorrectly states that northern Santa Barbara County is in "compliance" with the ozone standard. In fact, all of Santa Barbara County is currently non-attainment for ozone as a result of a recent reevaluation of Santa Barbara's air quality. A new ambient air monitoring station was installed as a condition of the Pt. Arguello project routinely detected the worst air quality in Santa Barbara County on Paradise Road in Santa Ynez Valley in northern Santa Barbara County. While there is no conclusive evidence, one theory is that the ozone violations are due, in large part, to OCS emissions. Unfortunately, there is insufficient evidence to make a conclusive determination. See Exhibit 1.

The mere fact that California as a whole consumes more oil than it produces does not mean that it is "equitable" to keep drilling off Southern California until the industry has had its fill. As noted in the supporting documentation, the great majority of benefits from OCS drilling takes the form of Federal revenues, little of which are distributed to local communities in OCS regions to assist them in dealing with the costs of OCS production.

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[2] This term refers to an emission's relative ability to form ozone in the lower atmosphere. Some emissions, such as the light, volatile gasses that are controlled from onshore tanks, for example, are far less reactive in the atmosphere and thus cause less ozone to form than the same unit of diesel emissions, which are the most common offshore emission. See generally Exhibits 4-6, studies performed for and used by the California Air Resources Board on relative ozone formation potential.

Despite the assertions contained in the program, the local economy gains little from OCS activities, as the lessees typically hire from outside the area, nearly all of the infrastructure is non-locally produced, and oil prices at the pump are substantially higher in Santa Barbara County than in surrounding counties. The oil industry has proven difficult to police, obstreperous in its dealings with local agencies, defiant in addressing local concerns, non-supportive of local programs and issues, and generally has very little to offer Santa Barbara County. It should come therefore as no surprise to the MMS that the proposed lease program is opposed by virtually every public agency and official in the county.

OCS activities pollute Santa Barbara County airsheds, consume precious local supplies of water, fill landfills with polluting waste, contaminate beaches and the coastal zones, threaten both major and minor environmental upset without warning, congest roadways, increase the hazards of recreational and commercial travel in the Channel, damage the fishing and tourist industries, blight the ocean panorama, and cause related adverse impacts. While MMS and the industry insist that OCS activities are a model of safety and environmental protection, they have no objective perspective to offer an opinion. As a regulator, MMS has displayed the assertiveness of a dead animal in pursuing OCS safety and environmental violations, actually confounding any possibility of promulgating an air quality rule for OCS emissions, forcing a Congressional Amendment of the enabling authority in order to accomplish protection of onshore air quality. In December 1988, Texaco pleaded guilty to intentionally faking safety test records on Platform Harvest in the Santa Barbara Channel, prompting the largest fine levied under the Outer Continental Shelf Lands Act. Hardly the product of a searching investigation, the Harvest incident was brought to light only when internal review failed and a whistle-blower managed to make the issue widely known. As an environmental advocate in the Santa Barbara region, EDC receives numerous contacts from potential whistle-blowers advising us of unsafe practices and illegal activities, and thus believes that safety and environmental violations are commonplace on the platforms.

Thus, the Secretary has failed to bother to examine the equitable sharing of development benefits and environmental risks among the various regions, and in particular to evaluate the level of both benefits and risks foisted upon the Santa Barbara region from past, current and future OCS activities.

(C) the location of such regions with respect to, and relative needs of, regional and national energy markets

The location of this region with respect to, and the relative needs of, regional and national energy markets clearly argue against the leasing proposal. There is no refinery capacity in Santa Barbara or San Luis Obispo Counties, nor is there a direct pipeline to the Los Angeles refineries. Increasingly stringent air quality restrictions in the Los Angeles air basins promise to severely limit refinery operations there, thus is appears that there is not much of a regional refinery market to take the problematic heavy, low grade crude oil currently known to exist in the Santa Barbara Channel and Santa Maria Basin.

The Secretary has evidence that California intends to implement its own energy policy and thereby reduce its dependence upon OCS oil. Air quality concerns have placed California on the cutting edge in the development of alternative fueled vehicles, further decreasing the regional demand for oil. MMS cites the lack of easily available alternative fuels as justification for the need for continued oil development, but California is currently developing several alternative fuels that will be commonly available. MMS has failed to realistically consider the relative energy needs of California in developing this lease sale.

As you are no doubt aware, Santa Barbara County has enforced the State policy in favor of pipeline transportation over tanker transport. Chevron and several of its Pt. Arguello partners, in violation of the spirit if not the letter of its agreements with the County of Santa Barbara, is now sending their Pt. Arguello crude oil to the Bay Area by pipeline, then shipping it by tanker to its preferred destination, L.A., through the Santa Barbara Channel. Although pipeline facilities exist for the transportation of Santa Barbara crude to Los Angeles, they remain unused. In short, the continued absence of feasible local oil refining and delivery systems despite the long oil industry presence here should make it clear that this area is inappropriate for further leasing.

(D) the location of regions with respect to other uses of the sea and seabed, including fisheries, navigation, existing or proposed sea lanes, potential sites of deepwater ports, and other anticipated uses of the resources and space of the outer Continental Shelf

The location of the leased regions with respect to other uses of the seabed, including fisheries, sealanes, and other OCS uses, was seemingly ignored in proposing this lease sale. The Santa Barbara Channel is a very busy and hazardous area, and many of the channel tracts are located directly within shipping lanes. Additional OCS production cannot occur without substantially increasing the probability of a major accident.

Exploratory and production drilling add particulate matter to ocean water in the form of drilling muds and cuttings. This interferes with light accumulation by kelp and phytoplankton species which leads to less primary productivity. This affects the amount of fish, shellfish and filter feeders in the area. This damages the fishing industry, which is another significant use of the area's resources that was seemingly ignored. There are also various tracts proposed in the shipping lanes. This violates applicable regulations, which prohibit fixed structures in these lanes in order to avoid collisions.

The Southern California Planning Area contains the Santa Barbara Federal Ecological Preserve and Buffer Zone (in which certain uses including oil and gas drilling are specifically prohibited), the Santa Barbara Channel Islands National Marine Sanctuary, the Channel Islands National Park, and the proposed Central Coast National Marine Sanctuary. There are numerous recreational uses of the waters of the Santa Barbara Channel, including swimming, surfing, diving, whale-watching, fishing, and sailing, to name a few. All of these uses could be severely curtailed by an accident occurring in connection with OCS leasing, exploration and drilling. The Proposed Program's consideration of these risks is clearly inadequate.

The NAS has concluded that MMS' analysis of standard socioeconomic impacts was inadequate for Lease Sale 95 and the analysis of the effects of platforms on tourism is "seriously flawed". As is noted *infra*, in EDC's Comments to DEIS discussion of "Impacts on Recreation and Tourism", MMS has failed to overcome NAS objections and makes some startling assumptions and conclusions that are not supported by any evidence, much less substantial evidence.

Though factor (D) was obviously included by Congress specifically to prevent leasing in heavy multi-use regions such as the Santa Barbara Channel/Santa Maria Basin area, the MMS seems nonetheless intent on pushing ahead. We contend that these numerous other uses of the Santa Barbara Channel, in combination with the already-existing development, constitute an absolute bar to the proposed lease sale, under the two-part test enumerated in Watt II.

(E) the interest of potential oil and gas producers in the development of oil and gas resources as indicated by exploration or nomination

Despite the MMS' relative ranking of the Southern California Planning Area as fifth in industry interest, the actual (i.e., absolute) interest of oil and gas producers in additional leasing in this area is limited. Of 105 active existing leases in this area, 88 remain undeveloped; it is senseless to offer more leases when there is already an oversupply. Though the oil industry is surely willing to have the MMS permanently open up the area to future exploration (much as a child who has eaten his fill nevertheless has no objection to his mother buying him more sweets and storing them in the pantry), this mere generalized interest is not the type of strong interest required by Congress.

(F) laws, goals and policies of affected States which have been specifically identified by the Governors of such States as relevant matters for the Secretary's attention

The laws, goals and policies of affected states are in strong conflict with the proposed leases. As you are well aware, virtually no California government agency or official wants this proposal, yet MMS seeks to cram it down the state's throat. The California Coastal Commission has already made a non-consistency determination as to 19 of the current 87 tracts in a similar lease sale, # 53, in 1981. It is surely wishful thinking to think that the same finding would not be made today.

The Draft EIS itself notes (p. IV.D.-233) that "Several political jurisdictions along the California coast, including the cities of Morro Bay and San Luis Obispo and San Luis Obispo County, have passed ballot measures which either (1) prohibit any onshore facilities that would directly or indirectly support OCS activity, or (2) require voter approval of such facilities prior to issuance of required local permits". Obviously the "laws, goals, and policies of affected States" oppose OCS development in this area.

Similarly, Santa Barbara County's citizens and government officials have repeatedly expressed objections to the proposed program and asserted numerous laws, goals and policies which are irreconcilable with the proposed program.

One glaring failing of the Proposed Program, of course, is its failure to meaningfully

address the many issues raised by the various public officials, agencies, groups and individuals commenting on the Draft Proposed Program. These include numerous factors which clearly belong in the §1344(b)(2) analysis, but were treated cursorily at best in the Proposed Program.

(G) the relative environmental sensitivity and marine productivity of different areas of the outer Continental Shelf

The Proposed Program's discussion of the Southern California Planning Area's relative productivity and environmental sensitivity is also inadequate, regardless of whether it may meet the test of "rationality" articulated in Watt II. The uniqueness, richness and sensitivity of this area is essentially ignored.

The Santa Barbara Channel and Santa Maria Basin OCS lands are extremely sensitive and productive from a biological perspective. They have been compared to Georges Bank in productivity value, but unlike Georges Bank, their ecosystems are far more sensitive to OCS activities. Significant adverse impacts from merely the disposal of drilling cuttings and muds have been documented. Many other aspects of OCS activities affect the marine, coastal and human environments in a similar fashion; the Proposed Program fails utterly to consider these impacts.

Notwithstanding the direct impacts from the existing, extensive OCS activities, the ecosystems that will bear the brunt of the impacts from the current proposal are currently under stress from other human activities and from other changes in the ecological character of the area. These impacts have caused significant adverse impacts to ecosystem productivity and sustainability, and the MMS proposal would simply magnify and exacerbate these impacts. These cumulative effects are in part due to existing onshore activities (such as loss of wetlands and other damage to riparian habitats where many sensitive OCS species spend a portion of their life cycle), point and non-point source pollution, maricultural and recreational activities, air pollutants deposited in the waters, drought, low altitude overflights and both intentional and unintentional landings of various Air Force craft in the area (which is adjacent to the Vandenberg Air Force Base), increased population in the region, etc. When evaluating the proposed program under this factor, MMS must first examine the current condition of the ecosystem and determine what the cumulative effects will be, in addition to the direct effects. This has not been done in any systematic fashion.

Not only are all of the proposed lease lands in the migratory path of the California Grey Whale, but numerous other marine mammals rely upon the integrity and quality of these waters for an important part of their life cycle. Fifty-two percent of the California Sea Otter population, an endangered species, and the only known sea otter haul out area are found in the leased area. Nineteen of the tracts have been proposed for lease before and are contained in 34 which are being proposed as a National Marine Sanctuary. These 19 have previously been documented as a part of the range of the California Sea Otter. This area also contains major upwelling areas where nutrient-rich waters support an abundance of life. Since any additional OCS activities would adversely impact these resources, opening these 87 tracts for lease would have a disastrous effect upon many of these species and the biological viability of the entire Channel ecosystem.

The Santa Barbara Channel is a unique environment. It houses the Channel Islands National Marine Sanctuary. San Miguel Island is a major hauling-out area for the California Sea Lion, the elephant seal and many other pinniped varieties. The Channel is a transition zone between cold Arctic waters and warmer Southern currents. This area is conducive to upwelling and supports a wide variety of marine animals. The basking shark makes a yearly pass in spring to avail itself of the nutrient-rich waters. The Santa Barbara Channel and the Santa Maria Basin are part of the migration route of the California Gray Whale in its yearly migration from Alaska to Baja California. They can be seen from October to April or May, a good portion of the year. Kelp forests found in these basins are another important marine environment. There is an extreme diversity of ecological communities to consider in these areas and they are important components in many animals' life cycles.

As noted above, cumulative impacts have not been seriously addressed in the already-developed Santa Barbara Channel. There is growing evidence that environmental impacts are at or above threshold. On 99 active leases as of August 2, 1990, there were 19 platforms. That means that less than one-fourth of existing active leases are developed, yet they are currently causing huge environmental impacts. These impacts include effects on, inter alia, air quality, water quality, biological resources and aesthetics. Commercial fishing and marine resources are also impacted by exploration and development. More platforms will increase tankering and pipelining and the potential for oil spills will rise above the significant level it has already attained. Before adding more active leases to the already large number, current leases should be evaluated for development. Therefore, it is recommended that the 45 tracts in the Santa Maria Basin be deferred from leasing and the 42 tracts in the Santa Barbara Channel be deferred from leasing at least until the next five-year leasing proposal or until present cumulative impacts have been assessed. In light of the overwhelming adverse environmental impacts, any contrary action would violate the spirit and letter of the OCSLA.

Environmental sensitivity is likewise not addressed adequately. As noted on page 10-A-22 of the decision documents, only oil spills were considered in the environmental sensitivity analysis, though non-oil spill effects were said to be "included in the analysis by way of the 1992-1997 proposed program EIS". This is unacceptable. In an area such as the Southern California Planning Area, in which a variety of exploratory and pre-drilling activities, in addition to drilling, have been going on for a long time, the cumulative effects of non-spill activities are arguably the gravest and fastest-growing danger to the marine biota and habitat. Indeed, one can imagine proponents of drilling hoping fervently that as drilling continues, the region's relative productivity and sensitivity will decline, making further drilling in the area more likely.

As the NAS study indicated, there is also insufficient research regarding the environmental impacts of offshore oil and gas development in the Santa Barbara Channel, where development has been in effect for years. Various studies have been done, however, on different aspects of drilling impacts. One study concluded that recruitment of colonizing benthic invertebrates is reduced where sediments are covered with layers of drilling muds. Physical and chemical cues are important for these species. Another study found that juvenile lobster behavior is modified in the presence of drilling muds on sediments. Still another experiment found that drilling mud at differing depths has variable effects on growth rate and development in sea star embryos. While these studies come to various conclusions, they generally suggest that further research needs to be done. In fact, this finding was made by most of the researchers participating in Oil and Dispersent Toxicity Testing in a workshop put on by MMS in January, 1989. MMS is currently funding a five-year study on the Santa Maria Basin between Point Conception and Point San Luis. This study suggests that an amphipod, *Harpiniopsis epistomata*, shows a thinning of population during drilling activity and this is a good species for such research as it is sensitive to oil toxicity. These experiments and studies are a good beginning; however, much more needs to be done. These studies establish a basis for information, but do not predict or show cause-and-effect relationships. They can only speculate and conclude that there is much more information to be gleaned, but most tentative conclusions are that damage is occurring and will continue as long as there is OCS activity.

Other areas of environmental sensitivity include fisheries, air quality and potential oil spills. Increased oil development disturbs fish patterns. Increased turbidity from particulate matter inhibits primary productivity (i.e. plankton blooms) which translates into no food for fish, and thus, their leaving normal feeding grounds. Oil development gear has also been known to interfere with fishermen's nets and gear. With more platforms in the Channel there will be increased tanker traffic which degrades air quality and reduces the aesthetic value of beaches, whose decline will seriously impact the tourist industry. Finally, oil spills are a potential hazard. It seems that prevention is close to impossible and clean-up technology, while state-of-the-art, is still inadequate. Adverse weather conditions can severely inhibit clean-up efforts, and a completely effective method has not been designed. In sum, localities remain at great risk. See generally the Marine Emergency Management Study by the County of Santa Barbara's Energy Division in 1989 [11].

(H) relevant environmental and predictive information for different areas of the OCS

Finally, relevant environmental and predictive information for different areas of the outer Continental Shelf is not adequately considered. As R.H. Burroughs of Woods Hole, Massachusetts noted in 1981, "The baseline and monitoring technique as proposed for the OCS, while potentially a valid scientific effort, may not meet requirements that are a part of the government's legally mandated role for management of resources. First and foremost in that role is the government's obligation to identify environmental impact at the time of decision rather than to catalog it retrospectively through baselines and monitoring." This is the research path still taken today. With the lack of continuing research, cause and effect relationships cannot be documented. Marine organisms tend to adapt to adverse environmental effects until such chronic toxic levels occur as to begin killing organisms. Since benthic organisms bear the brunt of oil development pollution, the effects will not be seen until pelagic species show the same signs, when the problem is out of control. This is illustrated by the Beluga whale in the St. Lawrence River. These whales harbor extremely toxic amounts of PCBs from wastes from the paper industry until such a time as their bodies can no longer tolerate it. Therefore, more predictive methods are needed to provide timely and accurate information regarding environmental cause and effect relationships.

All relevant environmental and predictive information for different areas of the OCS indicates that the proposed leasing in the Pacific region is wholly inappropriate. Impacts have been observed for decades, and now the cumulative impacts are becoming known.

3. OTHER ANALYSES NECESSARY FOR COMPLIANCE WITH THE OCSLA

Section 1344 (a)(3) mandates that the Secretary shall select timing and location of any leasing, to maximum amount practicable, so as to obtain a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone. While there may be a high degree of probability that the new leases overlie oil and gas deposits, the Secretary should determine whether those deposits can be accessed through any of the existing facilities rather than allowing additional platforms. This alternatives analysis is mandated by this section in light of the severe adverse environmental damage to both the marine and coastal resources that are virtually certain to result from the proposed activities.

Section 1344(b)(2) requires that a leasing program include estimates of the appropriations and staff required to obtain resource information, analyze and interpret data, conduct environmental studies, prepare an EIS and supervise operations. We have not located these estimates in either the Summary and Decision or the Decision Documents for the Proposed Program.

Section 1346 of the OCSLA requires MMS to prepare numerous and substantial environmental studies before and during the leasing process. As noted below, local MMS staff have been unable to identify and locate these studies, and if they do in fact exist, they are certain to be inadequate. The limited studies that have been identified are unanimous in their conclusions that OCS activities are deleterious to the environment; no such information is reflected in the instant proposal.

Specifically, §1346(a)(1) directs the Secretary to "conduct a study of any area or region included in any oil and gas lease sale in order to establish information needed for assessment and management of environmental impacts on the human, marine, and coastal environments of the Outer Continental Shelf and the coastal areas which may be affected by oil and gas development in such area or region." This study has not been conducted, and if it has, it has not been made available to interested members of the concerned public. There can be no question but that the Secretary has had ample opportunity to conduct such an evaluation at least for those areas that have previously been the subject of a lease sale proposal; the failure appears to be an attempt to avoid documenting damaging information.

This failure is problematic for newly proposed areas as well in light of §1346(a)(2)'s requirement that this information be available not later than 6 months prior to the holding of a lease sale with respect to any area or region where no lease sale has been held. This information should have been publicly available and considered by MMS prior to the instant proposal. This failure to comply with Congress' specific mandate is unconscionable.

Further, §1346(a)(3) specifies :"[i]n addition to developing environmental information, any study of an area or region, to the extent practicable, shall be

designed to predict impacts on the marine biota which may result from chronic low level pollution or large spills associated with Outer Continental Shelf production, from the introduction of drill cuttings and drilling muds in the area, and from the laying of pipe to serve the offshore production area, and the impacts of development offshore on the affected and coastal areas."

Section 1346 (b) states that additional studies "shall monitor the human, marine and coastal environments of such area or region in such a manner designed to provide time-series and data trend information which can be used for comparison with any previously collected data for the purpose of identifying any significant changes in the quality and productivity of such environments, for establishing trends in the areas studied and monitored, and for designing experiments to identify the causes of such changes."

Lastly, §1346 (e) requires cumulative impact studies at the end of each fiscal year: none are publicly available.

In sum, it is unwise for MMS to assume that despite this absence of scientific support, its decision-making processes under OCSLA will sustain the inevitable judicial review.

NEPA ISSUES

EDC includes all of the above comments by reference in this discussion of National Environmental Policy Act ("NEPA") issues.

1. Recreation and Tourism

MMS has failed to address the extremely important issue of cumulative impacts of additional OCS development on Santa Barbara's recreation and tourism industries. As noted *supra*, the National Research Council previously characterized MMS' analysis of the effects of platforms on tourism as "seriously flawed". NRC, Adequacy, at page 66. In spite of this independent indictment in 1988, MMS failed to develop any additional evidence of what that impact actually was. This reflects a pattern of intentional ignorance. NEPA, OCSLA, and common sense forbid an agency from recognizing an issue that needs additional development, but instead intentionally keeping itself in a state of plausible ignorance to avoid the public disclosure of disfavorable information.

2. Endangered Species Act

Both the SID and EIS fail to address the full range of potential endangered species that may be affected by the 5 year plan. The documents supporting the 5 year plan contain Endangered Species Act discussions identifying marine mammals only, while numerous plant and animal species that will be adversely affected by the program are present in Santa Barbara and San Luis Obispo Counties. The few estuarine areas that exist in each region support numerous rare, protected and endangered species that should be discussed, at least on a generic basis, in the SID. The values cited in the SID for restoration of wetland and estuarine habitat is seriously flawed by orders of magnitude.

PROCEDURAL ISSUES

1. Availability of Critical Information

The MMS has not made important information available for the development of these comments: an extension of the comment period is necessary and warranted.

Commenters have experienced difficulties in obtaining the information necessary to make these comments meaningful and to respond to the legal and technical flaws in the proposal. Specifically, commenters have been thwarted in efforts to obtain the Secretary's annual reports to Congress required by §1343 and §1346, in particular the study required by §1346 (assessing the cumulative environmental effects of the OSCA activities on human, marine and coastal environments). The central nature of this particular document to these comments should be apparent.

Further, the local MMS office has expressed in the past an unwillingness or inability to provide copies of many of the studies and reports addressing region-specific issues. This office has contacted the Pacific MMS office on numerous occasions for various documents at my request. Some staff have been successful at obtaining some documents, only to be told that other documents are available only at the MMS office. Subsequently, MMS has informed us that certain documents were simply unavailable, including some we had already obtained.

To overcome some if these difficulties, we have resorted to the use of the Freedom of Information Act to obtain access to documents and information, only to have access and fee-waivers denied. Clearly this is not a freely open process but one in which information is carefully and tightly controlled, contrary to the spirit and intent of NEPA, OCSLA, and FOIA.

2. Many documents are hereby incorporated by reference

As noted above, much of the information relevant to this proposal has not been made publicly available. Freedom of Information Act requests have been processed slowly, then the information requested was not provided. Since MMS has been unable to make all relevant information available in time for consideration in the drafting of these comments, all MMS documents and other documents identified in the attached Exhibit list should be considered a part of the record in this proceeding, along with all information referenced or contained in the bibliography of each of these documents. All previous comments and supporting documents are intended to be repeated herein in their entirety.

Also included herewith are references to several documents providing evidence in support of these comments. Some are specifically referenced; most are cited generally. Any document that is not provided in its entirety is easily and publicly available with information provided on means for acquiring such documents.

3. Alternatives must be more thoroughly considered

MMS should utilize a least-cost analysis in evaluating leasing proposal questions, and determine whether there may be other mechanisms for accomplishing the same project goals without incurring costs to the marine and onshore environments.

Moreover, the current Program considers only two options for the Southern California Planning Area: leasing of the 87 tracts or no leasing. This sort of summary, all-or-nothing analysis is inadequate and insulting.

CONCLUSIONS

The Outer Continental Shelf Lands Act mandates that environmental and socioeconomic impacts be assessed. Resource potential, industry interest, costs and benefits, environmental sensitivity, and local laws, goals and policies all must be considered.

In fact, however, a tract's resource potential is not well understood before it is offered for leasing. The OCS Project Task Force in the Office of Planning and Research in Sacramento put together findings on offshore oil and gas development in Southern California in 1977. They stated, "Prior to leasing, however, the Interior Department rarely has any direct information on oil and gas resources from which to judge where leasing should be concentrated in order to increase domestic production or to weigh the benefits against the environmental risks of developing specific tracts." This is still true today, as can be seen from estimates of projected oil production. When no such information is available, it is difficult, if not impossible, to weigh environmental risks against development benefits, especially in an environmentally sensitive area like the Santa Maria Basin or Santa Barbara Channel.

Our excessive reliance on refined oil products is currently causing extremely deleterious effects on many portions of our society and economy. Alternative fuels and renewable resources, necessary to meet our energy needs when oil supplies are exhausted, are not developed when the price of oil is so low. We have seen a real-value reduction in the market cost of gasoline and other common oil-based products over the past decade, increasing consumption and discouraging conservation and development of alternative strategies. This impact has not been considered in this leasing proposal which was expressly intended to be reliant upon market-based incentives.

The cost-benefit analysis is lacking and too heavily biased toward the economic benefits of oil production. Environmental and socioeconomic costs are not measured in terms of dollars and cents, but are qualitative and quantitative in ways that could, but are not, converted into economically cognizable terms. The proposed leasing program focuses on the national costs for increased production, ignoring local and regional costs where the amount is greater. It is not an equitable comparison. If the nation always exploited local and regional areas for its own good, fundamental rights would be violated. This is diametrically opposed to the foundation of our nation.

Finally, laws, policies and past experiences need to be considered. In early 1985, the California Coastal Commission objected to a consistency certification by the U. S. Environmental Protection Agency for NPDES General Permits. Many interesting issues were raised, one of which concerned the enforcement of NPDES permits. Four inspections were made between 1981 and 1985. On one visit, drilling mud samples were not collected for bioassay testing, on two more visits muds were collected but not fully tested, and on the final visit, samples were still waiting to be tested six months later. Mud properties change over time; therefore such tests would not have been accurate. On the **only** unannounced visit, bioassay testing found the mud to be more toxic than permitted limits. Such consistency certifications are necessary to keep communication open between state and federal agencies. It also allows states, like California, to keep consistent Coastal Management Plans. Since leases seem never to be revoked, other measures need to be taken.

An analysis of the Schedule of proposed oil and gas lease sales pursuant to the factors enumerated in § 1344(a)(2) shows the current proposal to be wanting in virtually every area. An equitable sharing of developmental benefits and environmental risks among the various regions does not exist. Although certain areas have been deferred from leasing by President Bush, the environmental risks unquestionably outweigh the developmental benefits in the 87 tracts proposed for lease in Southern California. The Santa Maria Basin and Santa Barbara Channel are highly rich and environmentally sensitive areas, as discussed in various documents assembled by the California Coastal Commission. The Santa Maria Basin has been found to be similar to the deferred areas of Central and Northern California, and the Santa Barbara Channel has become highly developed despite the absence of any real analysis of the cumulative impacts which are excessive already.

The relative environmental sensitivity and the marine productivity of the different areas of the outer Continental Shelf are also not considered adequately. While studies have been done, many conclude that more information needs to be gathered. The MMS-sponsored five-year CAMP study is a good one; however, wells were not in exploratory or productive operation at all times. The study area, between Point Conception and Point San Luis, consists of two platforms that have been in operation less than the four years that the study encompasses. There is not sufficient evidence to say that cumulative and long-term effects are insignificant. This field is new, having been in existence for only about 15 to 20 years, and there have been no long-term studies showing conclusively that the benefits of oil development outweigh environmental impacts.

The considerations identified under 43 U. S. C. 1344(a)(2) are not properly addressed in the proposed leasing program. Until all of these criteria are fully evaluated and considered, these tracts should not be developed. Cumulative and long-term environmental impacts need to be addressed. While this is taking place, conservation and alternative energy sources should become the focus of the National Energy Policy.

Environmental and socioeconomic impacts are extremely important issues, as can be seen in the above analyses. It is difficult, however, to put dollars and cents measurements on them in an attempt to equate them with the economic benefits of oil development. Despite the MMS' claim that it has incorporated non-economic values into its analysis, we simply do not believe that this has been done, if indeed it can be by an agency which seemingly exists to promote the interests of the oil industry.

The 87 tracts not deferred by President Bush off Southern California falling in the Santa Maria Basin and the Santa Barbara Channel are highly environmentally sensitive and should be regarded as such in the decision-making process. The risks

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to these habitats are extreme and their loss would be a national tragedy. In light of the recent oil spills in the Persian Gulf and the Mediterranean Sea, which have been termed ecologically damaging, as well as the Exxon Valdez spill and other spills off Southern California, the MMS' eager promotion of increased oil development seems foolhardy at best and sinister at worst.

In 1975, Henry Lee stated, "The United States is now faced with the likelihood of changes in the availability and distribution of certain resources. How this country meets these contingencies will, in large part, determine the future not only of our environment, but also of our economy and the quality of our lives." This is still true today. If we do not institute a National Energy Policy based on conservation and alternative energy sources, our "quality of life" will degrade with the environment. If our economy begins to incorporate conservation and alternative energy sources now, we will not face such big shocks later. Obviously, the MMS seeks, through this plan, to forestall the day of reckoning as long as possible. This constitutes as an abuse of our natural resources.

The Comprehensive Program for 1992-1997 states, "if we are to have any chance of preventing the gap between U.S. energy production and consumption from widening further, and thus maintain our quality of life, exercise more independence in foreign policy, and reduce the risk of armed conflict, we must pursue all economic and environmentally prudent energy alternatives." Having just come out of an "armed conflict" in the Persian Gulf, alternative energy sources and conservation should become our focus. A National Energy Policy based on conservation and alternative energy sources is the key to a continued environment where future generations will have the same benefits, if not more, than those available today.

Thank you for your consideration of these comments. This proposal must not go forward. MMS has failed to justify its proposed action for obvious reasons: it cannot. This inadequacy makes the entire process defective and subject to reversal in the courts.

Sincerely,

Marc Chytilo
Chief Counsel
Environmental Defense Center

FRIENDS OF THE EARTH
Northwest Office

October 23, 1991

Department of the Interior
Minerals Management Service
ATTN: Branch of Environmental Projects Coordination
381 Elden Street
Herndon, Virginia 22070-4817

Dear Director:

We have received a copy of the Draft EIS and proposed Proposed Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Comprehensive Program for 1992-1997. The following are the comments of the Northwest Office of Friends of the Earth:

The Draft EIS fails to adequately address the anticipated impacts the proposed actions would have on ecosystems, wildlife, and humans. Because increased offshore oil and gas drilling would increase threats to air and water quality, wildlife habitat, and human health, such a decision cannot be permitted without a more complete understanding of the environmental impacts. Therefore, we support Alternative II, the "no action" alternative.

We oppose the proposed OCS leasing off the coasts of California, Oregon, Washington, New England, and the Florida Keys even after the year 2000 deferment date. We request permanent protection for these coastal areas, and we request that the Draft EIS be revised to incorporate a permanent ocean protection alternative. The following are specific issues which the MMS cannot ignore:

OIL SPILLS

The threat of catastrophic oil spills is inherent in the development of offshore oil. According to the U.S. Office of Technology Assessment, as long as oil is transported at sea, oil will continue to be spilled. Oil spills can irrevocably damage marine species, migratory species, and ecological communities; therefore, the potential for oil spills should be decreased by REDUCING the amount of offshore oil drilling and transporting.

CHRONIC EFFECTS AND CORAL HABITATS

In addition to the more obvious threat of major oil tanker spills is the threat posed by long-term, chronic, low-level exposure to discharges, spills, and leaks associated with the heavy industrialization of the oil industry. Scientists do not yet understand all of the repercussions of such chronic effects, but such contaminants surely do not IMPROVE the health of humans, wildlife, and habitat.

Particularly sensitive areas which have been cited repeatedly, however, are coral habitats. According to the National Research Council, "under conditions of prolonged direct exposure of OCS discharges, a stationary coral

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reef habitat appears to be particularly sensitive to drilling discharges and would likely suffer substantial impacts from these discharges." (1983) This and other scientific conclusions support the exclusion of coral banks from offshore oil lease sales.

The Draft Proposed OCS Program does not adequately disclose the anticipated impacts from the proposed action on offshore and onshore affected areas or the cumulative effects of such action on migratory species. Accordingly, the program should not be implemented as proposed.

POOR ENERGY POLICY

The plan to increase offshore oil drilling not only threatens human and environmental health, but it also fails to demonstrate a commitment to responsible energy policy. A sustainable energy policy cannot be based on short-term increased production of a dangerous, polluting, finite fossil fuel. Instead of the existing proposal, as part of the EIS process, conservation and energy efficiency measures as well as renewable energy alternatives should be emphasized.

According to the Natural Resources Defense Council, the amount of oil and natural gas saved through realistic energy efficiency improvements to vehicles, building, and appliances is nine times greater than the amount economically recoverable from the Arctic Wildlife Refuge and unleased offshore areas. Consequently, a plan which focuses on exploiting the few remaining U.S. oil reserves is NOT a sound energy policy; it will not provide national security. As long as the U.S. uses disproportionately more oil and gas than it produces, the nation will be dependent upon other nations to support its oil addiction.
The following are comments on specific regions:

GULF OF MEXICO

3,000 offshore oil rigs already exist in the Gulf of Mexico. Yet, this area, along with Alaska, has been targeted as a primary region to be even further developed by the gas and oil industry. As is the case with areas around the country, the health and viability of the Gulf region already suffers as a result of the gas and oil industry; and the states which border the Gulf are concerned. As noted in the Decision Document (DD), Louisiana believes that the development of distant, offshore leases has the potential of resulting in adverse impacts to coastal areas. Accomodation of larger offshore facilities and infrastructure changes, due to deep water platforms, will inevitably cause these additional adverse impacts. (p.21 DD)

In addition, neither the Decision Document's discussion on Geologic Science (pp. 142-143) or Environmental Science (pp. 158-163) takes note of sensitive and valuable coral banks, coral reefs, and coral hardbottom habitats, particularly as found in Lease Sales 131, 135, and 137. For this reason, we request that MMS support special protection for coral banks.

ATLANTIC

According to the proposed Decision Documents, the Mid- and South Atlantic region has been designated for consideration of leasing. As stated previously, Friends of the Earth opposes any new leasing in the nation's OCS, including the Atlantic.

CALIFORNIA

87 tracts, comprising over half a million acres, off the coast of California would be considered for OCS leasing after January 1, 1996. Because the area in question already suffers from the negative impacts of current gas and oil drilling, further activity would only increase the environmental damage to this area. The DEIS has failed to adequately quantify impacts and direct effects of the proposed action on the Coastal Zone of the State of California. Specifically, the DEIS has failed to indicate the degree of conformance of the proposed action with the laws, goals, and policies of the State of California, including the California Coastal Act, California's federally-approved Coastal Zone Management Plan, previous Consistency Determinations, California's pipeline policy, or the state's air quality standards. For example, how is it that a significant number of the 87 tracts being considered for leasing in 1996 were the subject of a negative "Consistency Determination" by the California Coastal Commission issued pursuant to the Coastal Zone Management Act?

Friends of the Earth strongly supports the protection of the entire California coastline as part of a "National Ocean Sanctuary," which would prohibit additional OCS leasing. Healthy, unpolluted coastal waters and the plants, animals, and people which depend on these waters must not be sacrificed for a couple weeks' worth of national fuel consumption.

ALASKA

Approximately 50% of all of the OCS lands being offered to the oil industry on a nationwide basis are in Alaskan waters. Subarctic and arctic ecosystems could be destroyed before they are well enough understood to know in what ways they are being irreparably damaged. Even though the ecosystems are not completely understood, it is clear that the economic and social well-being of Alaska's communities and people depends upon a healthy environment; this is especially evident in the Alaskan fish industry. Further offshore oil and gas drilling, and the pollution and chronic hazards it poses to wildlife and human health threatens the sustainability of Alaskan communities and ecosystems.

Among other environmental and socio-economic effects, such an increase in offshore oil and gas development in Alaska poses an even greater threat of major oil spills in every planning area along the west coast. For example, MMS has projected a 96% probability of one or more spills greater than 10,000 barrels in the Chukchi Sea.

We are particularly concerned that MMS will forge ahead with a leasing program in the absence of scientific data. For example, in Alaska, the relative environmental sensitivity analysis [Table 17, page 78] ranks the 26 planning areas by individual component. However, according to MMS, St. Matthew-Hall, Hope Basin, and Chukchi Sea have unknown marine habitat rankings. If this is the case, MMS can not sustain a case for leasing in these areas.

WASHINGTON-OREGON

Despite the fact that the Washington-Oregon OCS remains under active consideration for future leasing, MMS refused to schedule a public hearing in the Pacific Northwest. This is directly contrary to the emphasis of the Area Evaluation and Decision Process: "Enhancing the opportunities for States, coastal communities and other concerned parties to provide input."

Lease Sale #132, which covered the entire Washington and Oregon Coast, was a frontier sale in the 1987-1991 five-year OCS leasing program. This means that it is an uncertain area, at best, for oil and gas exploration.

The 1992-1997 Comprehensive Program Document ranks the Washington and Oregon coasts higher than California or Florida on MMS's environmental sensitivity ranking for Coastal Habitats (Table 17, page 78 DD)

According to the Decision Documents, (p. 128) Lease Sale #132 offshore Washington-Oregon have been canceled. However, it is clear from the discussion on pages 144-145, and 163 of the Decision Documents and page 50 of the Summary Document that MMS intends to proceed with environmental studies and, although not specifically noted, an industry request for interest. This continued activity is clearly contrary to the perception left by the Administration that the sale was cancelled to respond to environmental concerns.

MMS notes that this approach is based on the unanimous recommendation of the Pacific Northwest OCS Task Force (Summary, p. 50). We strongly oppose the resolution of the Pacific NW OCS TASK FORCE for the following reasons:

a) The resolution actually begins the leasing process by committing the states of Washington and Oregon to participate in the preparation of a request for industry interest in leasing. This request for interest is unwarranted if the intent of the resolution is to impose a delay to allow for the completion of environmental studies. It will further complicate the establishment of the Outer Washington Coast National Marine Sanctuary by needlessly requesting oil companies to express interest in drilling in this very same area off Olympic National Park.

b) The resolution is based on the false premise that the Department of Interior will actually take into consideration any new environmental data generated as a result of the proposed environmental studies. The history of the OCS Leasing program in not considering the environmental impacts of leasing decisions is clear.

For example, in Bristol Bay, Alaska, not only did this area contain extremely high fisheries values, it was one of the few sales either on or offshore that the State of Alaska opposed. Despite the fisheries resource values, the Department of Interior proceeded with the sale. In the past, the Department of Interior has sought to lease all portions of the OCS, regardless of environmental or resource values and, in some cases, even in the absence of clear interest on the part of the oil industry.

c) The development of the resolution involved inadequate public participation. The Task Force was a creature of the Department of Interior and no members of the public were appointed to the Task Force. In addition, other significant sectors of the coastal community, such as the local governments and the fishing industry, were not allowed seats at the table. No citizen advisory committee was established. Meetings were poorly advertised and were held at times and places most inconvenient to the working public.

d) The resolution is non-binding and unenforceable. The decision of the Secretary to endorse this resolution can not and will not bind future Secretaries or Administrations. In this sense, there is far less certainty in such a resolution than in the one year appropriation moratorium which Congress continues to impose.

In summary, for the reasons listed above, the process used by the Task Force is not a model for the nation. It has not resolved conflicts over OCS leasing in the Pacific Northwest. In fact, it has merely postponed these conflicts.

We, therefore, request an explanation of how a cancelled lease sale can proceed to the second of the Area Evaluation and Decision Process (the Request for Interest and Comments, highlighted as a major decision point).

SUMMARY

We find the Department of Interior's proposed Five-Year Outer Continental Shelf (OCS) program to be deficient and the draft environmental impact statement to be inadequate.

Sincerely,

Diana Nelson

Diana Nelson
Research Associate

FRIENDS OF THE SEA OTTER

P.O. BOX 221220, CARMEL, CALIFORNIA 93922

RECEIVED
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October 16, 1991

Mr. Barry Williamson
Director
Minerals Management Services (MS-4230)
1849 C Street, N.W.
Washington, D. C. 20240

Re: COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT
ON PROPOSED OCS NATURAL GAS AND OIL RESOURCE MANAGMENT PLAN

Dear Mr. Williamson:

The following represents our comments on the Draft Environmental Impact Report on the MMS Draft proposal for Natural gas and Oil Resource Management. We again welcome the opportunity to provide comment on the plan and reiterate our special concerns for the California and Alaska sea otter populations.

First, we would like to comment that it is laudable that the administration has enacted a moratorium on the central and northern tracts off the California coast. However, we strongly oppose any plans for lease sales in this area in 10 years and thereafter. In addition, we oppose exploratory drilling in these areas since even with exploratory drilling, the waste production and environmental impacts are significant in terms of release of toxic waste products into sensitive ocean environments.

We are pleased that new options have been developed to slow the pace of leasing, establish coastal buffers, and exclude certain sensitive biological features. However, these options do not affect our concern and opposition to the plan to develop these tracts. We support the option of Alternative II - no action.

Simply slowing the pace at which lease sales occur does not address the basic issue of the logic of these sales. It is not the pace of leasing which is contested, it is the essential decision to continue to develop offshore drilling when the energy benefits of such will not equal the environmental risks. It is estimated that even if all of the OCS is developed, it will not produce enough oil to significantly improve our import rates based on present national energy use in the long run. As noted in the FEIS, the US imports roughly 45% of its oil needs. Using this statistic as a criterea for enacting drilling is not appropriate. U.S. consumption continues to exceed production even though roughly two-thirds of the producing oil wells now in the world have been drilled in the United States. Even if the proposed new outer continental shelf areas and the Arctic National Wildlife Refuge were exploited, the amount of oil produced would not significantly reduce our need to import oil over the long term based on current and projected consumption needs.

U.S. Dept. of Energy data state that, as planned, the boost in oil production from 7.3 million barrels a day to almost 10 million in the year 2005, will be followed by a dramatic fall. By 2030, output would drop to less than 5 million barrels a day, less than produced now. Alternatives to drilling exist. Just by increasing the gasoline mileage of our cars to a minimum 40mpg, we can save as much oil as is imported now. It is, in fact, unsound economic and environmental planning to simply sell and drill our coastal areas. Too much is at risk; we urge a complete rethinking of this plan and a concerted effort on the part of all respective government agencies to create a sound energy plan based on conservation and alternative energy development.

Impacts on Air Quality

It is noted in the FEIS that coastal areas may be affected with an increase of less than 5% in terms of ozone increase. This is obviously unacceptable for those areas already impacted with air quality problems especially given the fact that one offshore oil platform can generate as much pollution as 7,000 cars driven 50 miles per day. (source: Save Our Shores)

Impacts on Water Quality

1. It is stated in the DEIS that impact to water quality will occur which will "cause a measurable change in one or more ambient water quality parameters up to several hundred meters from the discharge source for several weeks in marine and coastal waters...and that localized increases in trace metal and hydrocarbon concentrations may be severe and persist for longer periods." It is also stated that ..."Chronic low level water pollution related to the proposal will occur throughout the life of the proposed action."

It is impermissible to allow this since long term low level pollution will inevitably affect organisms at the bottom of the food chain which can greatly affect the health and reproductive success in marine mammals and birds, and possibly in humans who consume fish and shellfish which are polluted. In the case of the sea otter, which consumes up to 25% of its weight daily in the consumption of shellfish, these effects can be expected to have high impacts.

2. Given the on-shore sources for coastal pollution from both industry and community sources, this increase could represent a significant effect in overall pollution levels in coastal waters. Specifically, the California coastline contains several locations such as Monterey Bay and Santa Monica Bay that are designated as a Water Quality Limited Segments by the State Water Resources Quality Control Board, e.g., they are degraded and have been cited for pollution. Any areas which are "measurably degraded," by local pollution sources can only be made worse by the proposed planned activities.

Marine Mammal Effects.

1. Nowhere in the document is it made clear that the California sea otter population is a distinct subspecies from the Alaska population.
This delineation was confirmed by a team of zoologists, led by Don E. Wilson, as stated in the Journal of Mammalogy, February 1991, ("Geographic Variation in Sea Otters, *Enhydra lutris*.") In fact, their designation as a threatened species is partially based on this distinction. At the present time, there are an estimated 1,941 Southern sea otters (*Enhydrus lutris nereis*), whose only habitat is the coastline of California. By neglecting to make this delineation, the document erroneously represents these otters as simply another segment of the population, which is not so. As a distinct subspecies, this particular group is especially vulnerable to actions which could result in its extinction.

2 Furthermore, we contest the statement that in the event of accidental spill, the ..."threatened California sea otter and the California sea lion are expected to incur resulting mortality requiring up to 3 years for the populations to recover..." A spill the size of the Valdez could conceivably entirely destroy the present population of California sea otters. A spill half its size would set back population numbers by at least 10 to 15 years or more given the slow population rate of this subspecies. The California sea otter population growth is roughly 5-6% a year compared with Alaska sea otters at 17-20%. Clearly, this subspecies of sea otters is at heightened risk from oil related pollution and spill effects and its tenuous come back would be and is severely affected by offshore oil activities and their resulting spill possibilities and sublethal pollutants.

Impacts on Coastal Areas

It is well documented that in the southern California region, the possibilities for earthquakes is greatly increased due the presence of many active faults. Additionally it is pointed out in the DEIS that sea floor failure and unstable seepage areas are also a common occurrence in this area. It would seem prudent to refrain from drilling in any areas where hazards of this type exist.

In light of the above, we reiterate and state the following:

o We are opposed to leasing the 87 blocks in the Santa Maria Basin and the Santa Barbara channel. We reiterate this opposition based on the above comments and on the fact that, again, this sensitive environmental area also includes much of the existing range of the threatened California sea otter. We believe this area should be permanently removed from leasing considerations.

o Lease sales 91, 119, and 95 in Central and Northern California should be permanently removed for consideration for similar reasons as stated above.

o Lease sites located in the Yakutat Area, Cook Inlet, and St. George Basin are within the Alaska Sea Otter range. As noted in our earlier comments this population has already experienced high mortality due to the Exxon Valdez spill and continued evaluation reveals that most of the otters probably died from ingestion of oil resulting in liver and internal organ damage. Development of further oil sites within the otter range cannot be supported and we are, therefore, opposed to the lease of these sites.

o Regarding the DEIS analysis of environmental impacts on the sea otter population in the Pacific, we concur with the conclusion that the greatest cumulative effects are expected from accidental oil spills resulting from the transportation of oil. However, we disagree with the the estimated number of otters that would be destroyed (listed as "...tens of sea otters") Rather, in a spill of 7,000 to 30,000 bbl this number would be in the hundreds at least. This estimate is unbelievably low, given the risks faced by otters to mortality from oil ingestion and oiling of fur. No information was present from reports from the *Valdez* spill in this document, though thousands of otters died, and the lack of success of rehabilitation efforts was so evident. Initial reports indicate that the main source of death was due to ingestion of oil. Additionally, the DEIS states that "...However, birth rates among California sea otters appear to be comparable to those observed in Alaska, and the population seems thus far unaffected..." This is misleading in that the population growth of the California sea otter is 5-7% compared with the Alaska otter at 17-20%. Birth rate does not automatically relate to population growth as a high pup mortality rate can affect actual replacement levels which is, in fact, happening in California. Further, the DEIS states that "adverse effects on sea otters from environmental contaminants have not been documented...." As noted by Donald B. Siniff, and Katherine Ralls:

> "Many features of the life history of otters predispose them to exposure to spilled oil. They are coastal animals with strong site fidelity; they feed on benthic organisms that accumulate and store hydrocarbon residues from benthic organisms, ...and they spend a great deal of time at the surface moored to kelp beds that capture oil. The risk is amplified by...otters together, or rafts ..sometimes numbering a hundred or more...large groups can be exposed simultaneously."
>
> "Isolated populations, such as the one along the coast of California, are most endangered. As we have learned from the 1989 Exxon Valdez accident..a regional disaster can kill many animals. ...For the individual otter, contamination by oil spells an almost certain fate. An otter's preoccupation with grooming becomes obsessive, displacing other behaviors ,including feeding, resting, and caring for young. Despite its efforts, the otter may not be able to restore the insulative value of its coat." Sea Mammals and Oil, (Academic Press, Inc., Harcourt Brace Jovanovich, Publishers, 1990):

For the MMS to state, given the reality of the situation, that "..The number of spills assumed for the cumulative scenario makes it more likely that such impacts will occur. However since it is assumed that the spills will occur with uniform frequency and spatial distribution, no additive effects from multiple spills are expected"...is to deny the impossibility of predicting the effects of a large spill given the unstable wave patterns along the central California coast and the inability to assess the location of particular large collections of sea otters at any one time and the inability to capture and safely release them.

o As stated in our first comments to MMS on April 22, 1991, FSO strongly supports increased response to local and regional concerns regarding the drilling plan. We support the concept that local and regional concerns in regard to sensitive marine environments cannot be "balanced" with national needs because they represent a portion of that national entity.

o Finally, we do not encourage leasing the remaining areas of the Arctic National Wildlife Refuge and strongly oppose this strategy. Habitat destruction and the displacement of wildlife is inevitable simply thorough introduction of this activity, as we stated previously.

While FSO supports the proposed emphasis on the development of only those tracts offering the highest resource possibility and the least environmental costs, we again must state that we cannot support expansion of offshore drilling of the OCS prior to and in absence of a national energy policy promoting conservation, alternative and renewable energy sources, fuel efficiency, and strict and enforced controls on current offshore drilling and transporting of oil and gas. We would be happy to supply additional data regarding sea otter mortality and oil if the service would like further information on this matter. Again, we appreciate this opportunity to respond and hope that reconsideration of the plan will ensue.

Sincerely,

Susan Schiavone

Susan L. Schiavone
Assistant Executive Director

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SUPPLEMENTAL COMMENTS OF GREENPEACE USA

on the

U.S. DEPARTMENT OF INTERIOR OUTER CONTINENTAL SHELF

NATURAL GAS AND OIL RESOURCE MANAGEMENT

COMPREHENSIVE PROGRAM 1992-1997

and

DRAFT ENVIRONMENTAL IMPACT STATEMENT

October 1991

Prepared by:
Carol Alexander
Ocean Ecology Campaign
Greenpeace USA

Sent by fax 10/29/91

Greenpeace USA fully endorses the comments of the Natural Resources Defense Council, et al. on the "Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program 1992-1997" (hereafter referred to as proposed program) and the "Draft Environmental Impact Statement, Comprehensive Program 1992-1997" (hereafter referred to as DEIS). We offer the following brief comments from Greenpeace USA as a supplement only.

We appreciate the expansion of the comment period on the program documents to 90 days rather than 60 days, which has provided us ample time to determine that our concerns expressed in April 1991 comments on the draft program proposal have not been assuaged by the contents of the proposed program and the DEIS. The Greenpeace April 1991 comments were grouped roughly into six categories of particular concern:

1) The stated commitment to "focused leasing" and a newly balanced program with equal consideration given resource potential and environmental protection is false. The Minerals Management Service continues to offer for lease the areas of highest industry interest regardless of environmental and socioeconomic conditions.

2) The draft program continues delays in politically sensitive OCS regions where further leasing has been prohibited for ten years by Presidential decree, but has accelerated leasing in the most sensitive and least studied of all OCS regions, the Arctic Ocean.

3) Equally false is the promise for "quality science," as MMS continues to offer acreage in unstudied frontier regions and has accelerated pre-lease steps for as-yet unapproved new sales in the Beaufort and Chukchi Seas, Cook Inlet, and the Gulf of Mexico.

4) Outer Continental Shelf (OCS) hydrocarbon resources cannot contribute in any significant way to the nation's future energy needs.

5) The OCS leasing program does not make a significant contribution to the nation's economic stability or to national security.

6) Natural gas is not an "environmentally benign" source of energy as the draft proposal portrays, but is a polluting, finite fossil fuel.

We will not reiterate the fully referenced arguments supporting the above statements, which you will find in our April comments (a copy of which is enclosed for your convenience). Nor will we attempt to offer a specific critique of the proposed program and the DEIS in this document, as has been done in the NRDC et al. comments. We would, however, like to point out a few of the most glaring examples of faulty assumptions by which MMS has proceeded to faulty analyses, extraordinary leaps of logic, poor science, and an appalling lack of consistency throughout all documents prepared to support the proposed program.

At the heart of these problems, we believe, is the reality of an unjustifiable, unworkable, archaic leasing program that simply cannot be defended with sound thinking and good science.

The program document makes much of the existence of the 1991 National Energy Strategy and the assertion that the new five-year program has been constructed within its framework. MMS correctly got the first half of a message from past commentors on the OCS leasing program that (1) offshore oil and gas leasing must be justified within the context of a sustainable national energy policy (2) that is centered on energy conservation and renewable energy systems. The 1991 National Energy Strategy has instead centered on efforts to exploit oil and gas from the Arctic National Wildlife Refuge and the OCS with only cursory attention to energy conservation, increased efficiency, and implementation of renewable energy systems. Similarly, the proposed program has again ignored the demand for a national energy strategy founded in the reality of an energy future reaching beyond the one or two decades promised us by remaining U.S. oil and gas resources.

The proposed program states,

> [1] Dependence on oil imports is projected to increase and to extend well into the next century. [2] Oil from the OCS helps back out oil imports and thus reduces the drain on the economy of purchasing oil abroad which could be produced and delivered to market at home at less expense. [3] Oil from the OCS can also reduce the environmental risks associated with oil imports - which tend to be carried by very large tankers posing a significantly greater risk of a major spill overall than OCS oil development and transportation operations." (SID, p. xvi)

All three assumptions are dead wrong.

[1] In spite of MMS's dogged assertion that economic stability and growth in the U.S. are dependent on increased oil consumption, all evidence is to the contrary. Between 1973 and 1986, the U.S. economy nearly doubled while energy use remained constant, SOLELY AS A RESULT OF ENERGY EFFICIENCY IMPROVEMENTS (Brower 1990). Those improvements are now saving the nation 14.5 million barrels of oil every day (Flavin 1991) with extraordinary potential for further savings. By applying available, realistic energy improvements to vehicles, buildings and applicances in the U.S., we can save nine times the amount of hydrocarbons that are economically recoverable from the Arctic Refuge and the unleased OCS within 30 years (Calwell 1990), less time than it would take to complete production of the OCS and the Arctic Refuge.

Even industry publicly acknowledges the likelihood of decreased energy consumption during the next 20 years: the U.S. Gas Research Institute recently drastically downscaled its predictions of future

energy consumption from last years's prediction of 90.5 quads energy use by 1995 to 88.5, and from 111.8 quads in 2010 down to 99.5 (Energy Report 9/2/91). Similarly, the enclosed graph from the American Petroleum Industry documents the precipitous drop in petroleum consumption per $1000 of gross national product since 1978.

[2] MMS's use of the sophomoric euphemism "back out oil imports" might be amusing were it not for the manner in which it is actually incorporated as a major assumption for analyses in the DEIS. We will once again remind MMS of the geological reality that the nation has only a small fraction of the global supply of oil and natural gas (4.4 percent of oil and 7.9 percent of gas, SID Appendix 6-70). There is no escaping the conclusion that continued dependence on oil and natural gas as our primary energy source means continued dependence on FOREIGN oil and gas.

If the Bush Administration were truly committed to the concept of "backing out oil imports," one can only wonder why the President is supporting legislation that will enable him to administratively decide to LEASE FOREIGN OIL to "fill" the Strategic Petroleum Reserve, and why negotations are now under way between the U.S. Department of Energy and Saudi Arabia to this end (Energy Report 9/30/91).

As to the statement that domestic oil and gas can be produced cheaper at home than abroad, this is simply untrue. In one of the numerous inconsistencies rife in the program documents, Appendix Six admits this: "Unfortunately, we have already discovered and produced most [of these] low cost domestic resources. Resources whose costs are in the $2 to $3 mcf or $10 to $15 per barrel range are more typical of current U.S. production" (SID, Appendix 6-10).

The cost of U.S. production will continue to rise as trends towards deep water and Arctic exploration and development continue. For example, in 1985 the U.S. Office of Technology Assessment estimated exploration and development costs for even a large field (one billion barrels) in the Arctic Ocean (Harrison Bay) at approximately $18/barrel (OTA 1985). U.S. OCS oil and gas production will never again be cost competitive with cheap Persian Gulf hydrocarbon resources. The insistence of the National Energy Strategy and the proposed program to rely on the marketplace to choose alternative energy sources will always funnel us into the cheapest energy source at the moment - Persian Gulf oil, for now, as long as the supply lasts.

[3] OCS oil will not necessarily be transported by pipeline. As evidenced by the Point Arguello fiasco in California, even should MMS and industry agree at the lease sale, development plan, and production plan stages that pipelines will be the mode of transportation, coastal residents have NO guarantee that this will be the case. In the event of the Arctic OCS, pipeline placement is frankly impossible due to the extraordinary geo- and ice hazards. Furthermore, for the sake of discussion, even should ALL future OCS oil and gas be transported by pipeline, the pipelines will be in addition to foreign oil tankering, not a replacement for it; "backing out" foreign tankers can only be accomplished by "backing out" oil consumption.

From the above three grossly incorrect assumptions, MMS proceeds through an inexorably faulty OCSLA section (18) analysis of the "benefits" of OCS leasing.

Here follow several other random examples of misinformation and faulty thinking :

* Of the criteria used by MMS to "select a limited number of [energy] alternatives for detailed evaluation:" (SID, p.16) "energy alternatives selected had to be relatively low cost. . .the highest cost alternatives cannot be true alternatives for the nation." In other words, the marketplace would not receive them in the face of cheap oil and gas supplies. However, earlier MMS had referenced the need for the Wellhead Decontrol Act of 1989, which will "bring regulated prices of certain natural gas more in line with market prices" (SID, p. 13) It is acceptable to manipulate the energy marketplace for some energy entities, but not others, we are to assume.

* Also as an identified criteria for energy alternative evaluation: "Implementation of the energy alternatives selected had to be technically feasible by the year 2000" (SID, p. 17). Most of the new oil and gas fields which would be developed as a result of the 1992-1997 proposed program would not begin production until well after the year 2000, in comparison with solar, wind, hydrogen and conservation alternatives that are available TODAY. Perhaps what MMS meant to say is that it had to be POLITICALLY feasible by the year 2000.

* A final example of the criteria used for energy alternative evaluation: "The energy alternatives selected had to include those commonly believed to be attractive, serious alternatives to natural gas and oil use, whether or not they were truly low cost" (SID, p. 17). We would be pleased to hear MMS provide us their definition of "commonly believed" and "attractive, serious alternatives." We would also be grateful to know the MMS perception of "truly low cost," as elsewhere in the program documents, MMS has rejected ubiquitous requests for least-cost planning analysis, with a statement that least-cost planning is "simplistic."

* Natural gas is referenced as producing less nitrogen oxide than oil, which is untrue. Natural gas combustion produces roughly 25 percent more oxides of nitrogen (depending on the combustion process) as does oil (French 1990).

The State of Louisiana, which has been visited by OCS development for decades and knows whereof they speak on the subject, had the following comment to make on the MMS social cost analysis contained in Appendix 8 of the SID:

> The 'analysis' of social costs produced by Kearney (1991) amounts to little more than a disingenous, pseudo-scientific exercise designed (through the use of untenable assumptions and liberal use of argot, to confuse the uninitiated), to support predestined outcomes. . .If we are to believe the decision documents, then the 'marine, coastal and human environments' which the Secretary of Interior is required to consider under the OCSLAA of 1978 are comprised entirely of 'Spill Avoidance, Infrastructure, Preemption and Gear Loss, Air Quality, Water Quality, Commercial Fisheries, Wildlife, Subsistence, Legal, Administrative and Research, Lost Oil, Wetlands, Property Value, Spill Cleanup and Control, and Recreation and Tourism' (See pages 8-13 to 8-15 in Appendix 8). These are the ONLY elements considered to incur costs under the SID social cost analysis. . .There are a number of reasons that this myopic view of the world emerges from MMS's analysis. (Louisiana Coastal Resources Program, 1991)

Greenpeace completely concurs with this description of the MMS social cost analysis, and with the following description of the intent of the proposed program:

> . . .the consideration of factors required under section 18 of the OCSLA is grossly biased in the direction of industry interest . . .the activity proposed for 1992-1997 is unambiguously related to Industry Interest and shows no significant influence of any of the other Section 18 factors. . .What this means is that the same decision[s] could have been reached merely by polling the industry, without costly resource estimates and analyses of social costs, productivity and sensitivity by the Department of the Interior. (Louisiana Coastal Resources Program 1991).

Those closest to MMS are also aware of the new five-year program's primary goal, judging from a recent editorial in the "Oil and Gas Journal" entitled, "Problems for the New MMS Chief." The editor wrote that the new MMS Director, Scott Sewell "seems to understand that promoting exploration and development of petroleum resources in federal land is the primary goal of his job" (Oil & Gas Journal 9/16/91).

Discussion of the incalculable number of errors, illogical conclusions and faulty, dated science contained in the DEIS will not be attempted in these abbreviated supplemental comments, but we will mention several particularly disturbing examples:

* DEIS, iii. ". . .in virtually all cases impacts are not expected to result in permanent damage or to loss of these resources. Notable exceptions are VERY SMALL amounts of wetland loss in the Gulf of Mexico, and POSSIBLE social changes among the natives of the north slope of Alaska [emphasis added]."

In fact, in the first two decades of OCS activity in the Gulf alone (until 1978), somewhere between 21,863 and 49,884 hectares of wetlands were lost in Louisiana alone as direct or indirect result of OCS activities (Louisiana 1991). According to the State of Louisiana: "The simple answer, with respect to Louisiana's coastal wetlands is;

that the cumulative impacts have been significant, are essentially irreversible, and will be worsened by the proposed action" (Louisiana 1991).

The "possible" social changes in North Slope Alaskan Native communities from the imposition of OCS-related activities will be a continuation of severe, long-term changes in social and economic structures that have been created solely by the presence of oil and gas-related activity on the North Slope that are irreversible and have been exhaustively documented (by MMS's own studies, for example MMS88-0079, MMS90-0065, MMS89-0078, MMS89-0077, MMS90-0039).

* DEIS, v. "In Alaska, exposure of wetland and estuarine habitats to oil from assumed spills may affect associated invertebrate animal productivity and diversity. However, even if they are heavily exposed to oil, these habitats could fully recovery in about 10 years." Spilled oil in estuaries, wetlands and tide flats has been documented to persist well beyond 25 years.

* DEIS, v. "No substantive land use impacts are expected to result [from the proposed program] . . .however, subsistence resources [in Alaska] are not expected to be rendered unavailable or undesirable for periods of more than one year." Does MMS understand what subsistence means? Loss of subsistence for one week would be deleterious to North Slope communities - for one year would be devastating.

* DEIS, vi. Predicts that if the proposed program is not implemented and foreign oil imports are not "backed out," the result will be "an estimated 7,000 tankers involved over a 30-year period." Although this is unclear, we assume this means 7,000 tanker trips. Ironically, if the Arctic Refuge is opened to development, an additional 4,000 tanker trips will be required to transport the oil to lower 48 ports (NRDC 1991). If one factors in the additonal tanker trips needed to transport OCS Arctic oil from Valdez down the Pacific Seaboard, the number goes well over 7,000 tanker trips from the Alaskan Arctic alone.

* DEIS, IV.D-29. As a result of the above-described increased tanker traffic from OCS activity alone, MMS predicts: "In the base-case scenario, three tanker oil spills of 30,000 bbl each are assumed to occur along the tanker route in the Pacific Region: one off the Washington coast, one off northern California, and one off southern California as a result of oil production in the Alaska Region."

Incidentally, Greenpeace requested a public hearing on the proposed program in the Pacific Northwest region in order to allow public response to these very real risks from OCS activity even though the Northwest does not have a lease sale scheduled in the next five years. MMS refused.

Generally, whole species were overlooked in regional discussions of impacts. For example, at IV.D-515(c.l.a.), the threatened Steller Sea Lion populations of the Pacific Northwest were not even mentioned in the Pacific Region; at IV.D-497(b.l.a.), Orcas (Killer Whales) were not even mentioned for the Alaska Region.

The conclusions of the "Cumulative Impacts" section read like a nightmare of illogic: the impacts predicted are extremely severe, yet the overall program conclusion is that "no permanent changes" are expected to occur in the populations discussed (DEIS iv). Some examples of expected cumulative impacts on Alaskan marine mammals:

* "Overall cumulative impact on the Alaskan Steller sea lion population is expected to require six generations or more for recovery during the 30-year period of the proposal. Principal components on this impact are non-OCS and OCS oil and gas development (DEIS IV.D-504).

* "Overall cumulative impact on the northern fur seal population is expected to require five generations for recovery during the 30-year period of the proposal. Principal components of this impact are non-OCS and OCS oil and gas development (DEIS IV.D-509).

* "Overall cumulative impact on the Alaskan harbor seal population is expected to require five generations or more for recovery during the 30-year period of the proposal. Principal components of this impact are non-OCS and OCS oil and gas development (DEIS IV.D-512).

* "Overall cumulative impact on the Alaskan sea otter population is expected to require five generations or more for recovery during the 30-year period of the proposal. Principal components of this impact are non-OCS and OCS oil and gas development.

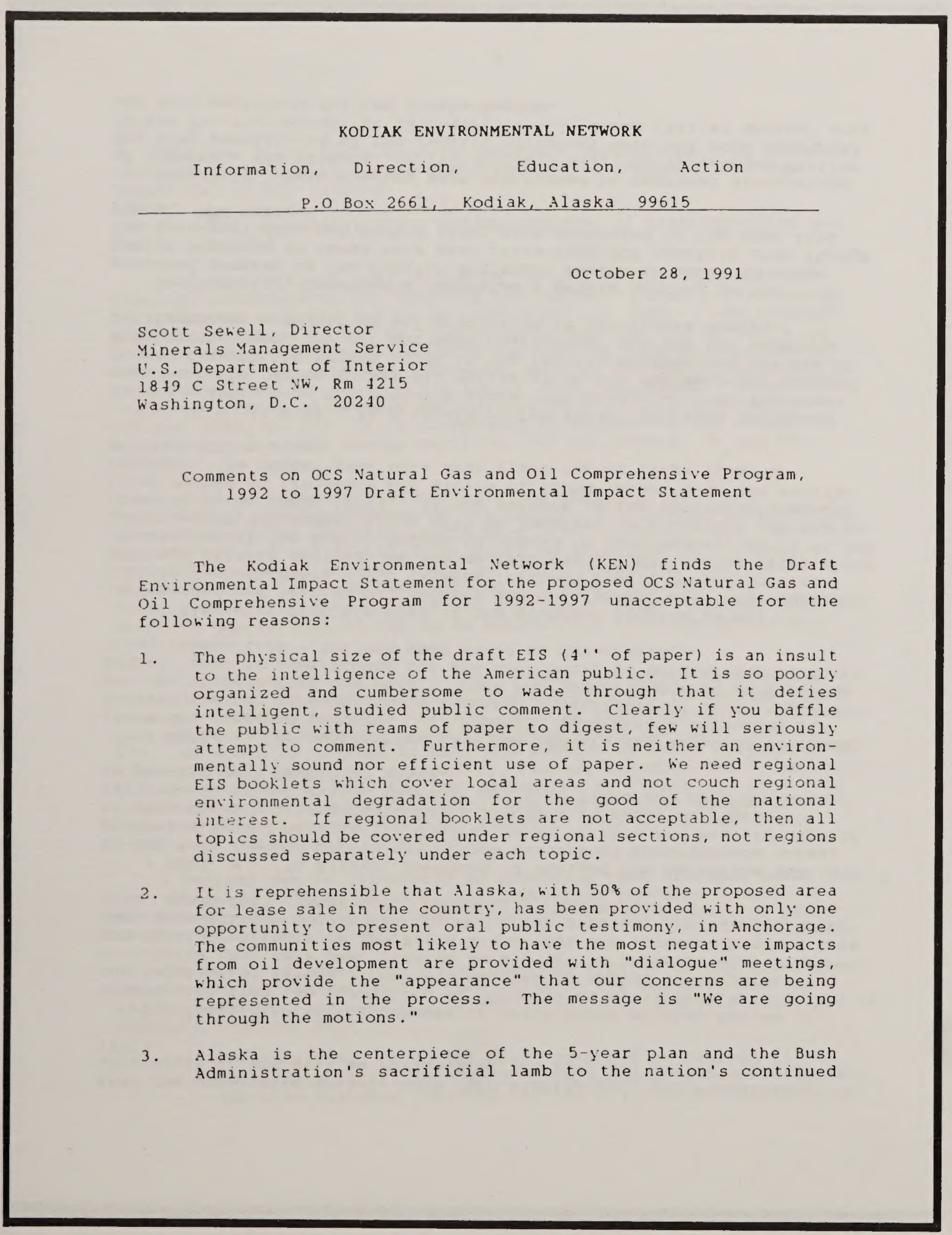
Similarly severe are cumulative impacts predicted for seabirds, subsistence uses, commercial fishing.

CONCLUSION

Greenpeace USA remains unalterably opposed to the perpetuation of the OCS five-year leasing program. MMS has fullfilled none of the obligations for which it bears responsibility. It has not "balanced" the proposed program; it has not fullfilled an adequate section (18) analysis; it has not used current scientific and socioeconomic studies in preparation of the DEIS, nor has it reached accurate conclusions based on the dated studies that were used; it has not presented a realistic 'no-action' alternative to the proposed program because it has not considered genuine energy alternatives.

Greenpeace respectfully requests that the U.S. Department of Interior withdraw the proposed program.

Enclosures: Greenpeace April, 1991 comments on the draft proposal.
API graph



KODIAK ENVIRONMENTAL NETWORK

Information, Direction, Education, Action

P.O Box 2661, Kodiak, Alaska 99615

October 28, 1991

Scott Sewell, Director
Minerals Management Service
U.S. Department of Interior
1849 C Street NW, Rm 4215
Washington, D.C. 20240

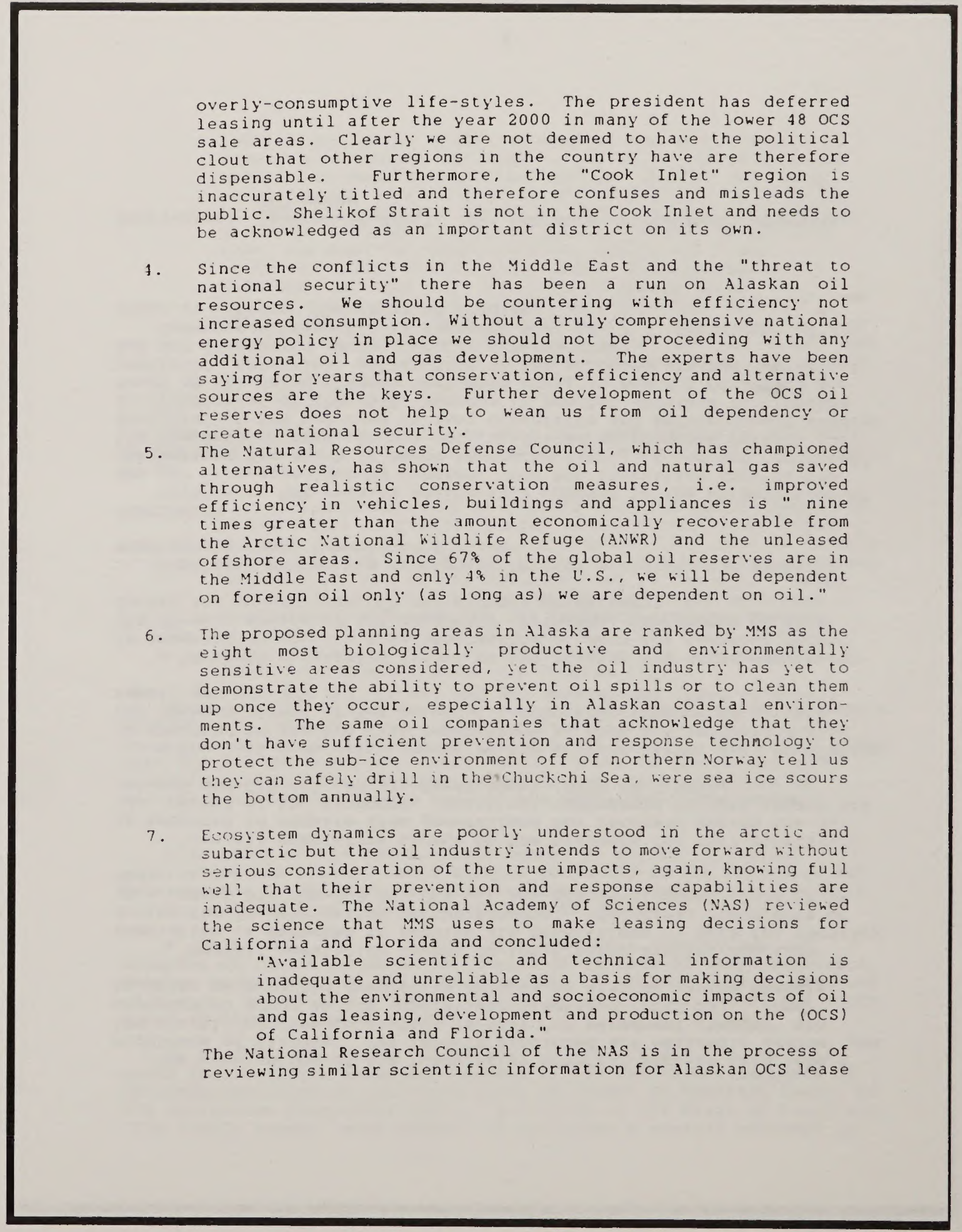
Comments on OCS Natural Gas and Oil Comprehensive Program, 1992 to 1997 Draft Environmental Impact Statement

The Kodiak Environmental Network (KEN) finds the Draft Environmental Impact Statement for the proposed OCS Natural Gas and Oil Comprehensive Program for 1992-1997 unacceptable for the following reasons:

1. The physical size of the draft EIS (4'' of paper) is an insult to the intelligence of the American public. It is so poorly organized and cumbersome to wade through that it defies intelligent, studied public comment. Clearly if you baffle the public with reams of paper to digest, few will seriously attempt to comment. Furthermore, it is neither an environmentally sound nor efficient use of paper. We need regional EIS booklets which cover local areas and not couch regional environmental degradation for the good of the national interest. If regional booklets are not acceptable, then all topics should be covered under regional sections, not regions discussed separately under each topic.

2. It is reprehensible that Alaska, with 50% of the proposed area for lease sale in the country, has been provided with only one opportunity to present oral public testimony, in Anchorage. The communities most likely to have the most negative impacts from oil development are provided with "dialogue" meetings, which provide the "appearance" that our concerns are being represented in the process. The message is "We are going through the motions."

3. Alaska is the centerpiece of the 5-year plan and the Bush Administration's sacrificial lamb to the nation's continued overly-consumptive life-styles. The president has deferred leasing until after the year 2000 in many of the lower 48 OCS sale areas. Clearly we are not deemed to have the political clout that other regions in the country have are therefore dispensable. Furthermore, the "Cook Inlet" region is inaccurately titled and therefore confuses and misleads the public. Shelikof Strait is not in the Cook Inlet and needs to be acknowledged as an important district on its own.



4. Since the conflicts in the Middle East and the "threat to national security" there has been a run on Alaskan oil resources. We should be countering with efficiency not increased consumption. Without a truly comprehensive national energy policy in place we should not be proceeding with any additional oil and gas development. The experts have been saying for years that conservation, efficiency and alternative sources are the keys. Further development of the OCS oil reserves does not help to wean us from oil dependency or create national security.

5. The Natural Resources Defense Council, which has championed alternatives, has shown that the oil and natural gas saved through realistic conservation measures, i.e. improved efficiency in vehicles, buildings and appliances is " nine times greater than the amount economically recoverable from the Arctic National Wildlife Refuge (ANWR) and the unleased offshore areas. Since 67% of the global oil reserves are in the Middle East and only 4% in the U.S., we will be dependent on foreign oil only (as long as) we are dependent on oil."

6. The proposed planning areas in Alaska are ranked by MMS as the eight most biologically productive and environmentally sensitive areas considered, yet the oil industry has yet to demonstrate the ability to prevent oil spills or to clean them up once they occur, especially in Alaskan coastal environments. The same oil companies that acknowledge that they don't have sufficient prevention and response technology to protect the sub-ice environment off of northern Norway tell us they can safely drill in the Chuckchi Sea, were sea ice scours the bottom annually.

7. Ecosystem dynamics are poorly understood in the arctic and subarctic but the oil industry intends to move forward without serious consideration of the true impacts, again, knowing full well that their prevention and response capabilities are inadequate. The National Academy of Sciences (NAS) reviewed the science that MMS uses to make leasing decisions for California and Florida and concluded:

   > "Available scientific and technical information is inadequate and unreliable as a basis for making decisions about the environmental and socioeconomic impacts of oil and gas leasing, development and production on the (OCS) of California and Florida."

   The National Research Council of the NAS is in the process of reviewing similar scientific information for Alaskan OCS lease planning. As the Secretary of the Interior is charged with sound resource management, MMS should not go forward with further leasing activity in the Alaskan planning areas until that review is completed.

8. The DEIS makes very vague and general statements about ecological impacts that are totally unfounded. It is criminal to try to pass this document off as a definitive EIS. Statements such as most populations "are expected to recover within a few years of exposure (to an oil spill)" make light of the unknowns generated by wide spread catastrophic events in natural populations and whole ecosystem structures and demonstrates a lack of knowledge or consideration on the subject.
Of more immediate concern is the affect on Kodiak's economy a "few years" of population recovery can have among commercial species.

9. The DEIS routinely makes unfounded statements like "no permanent impacts", "no permanent degradation", "no substantive reductions", "no substantive degradation", "no permanent change" when talking about habitats, water quality, finfish and shellfish populations, air quality, and wildlife populations exposed to oil spills. The insinuation is that taking "about 10 years" to recover from heavy oil exposure to estuaries is somehow a benign affect, not to mention that it is a wholly unfounded statement. Where are the data?

10. Buried in the verbiage are innocuous statements like "most of these (impacts) are expected to be found in Alaska." Not to mention conclusions like: "However, subsistence resources are not expected to be rendered unavailable or undesirable for periods of more than one year." These statements are appalling and demonstrate a clear lack of understanding of the impacts both environmentally and socially to Alaska.

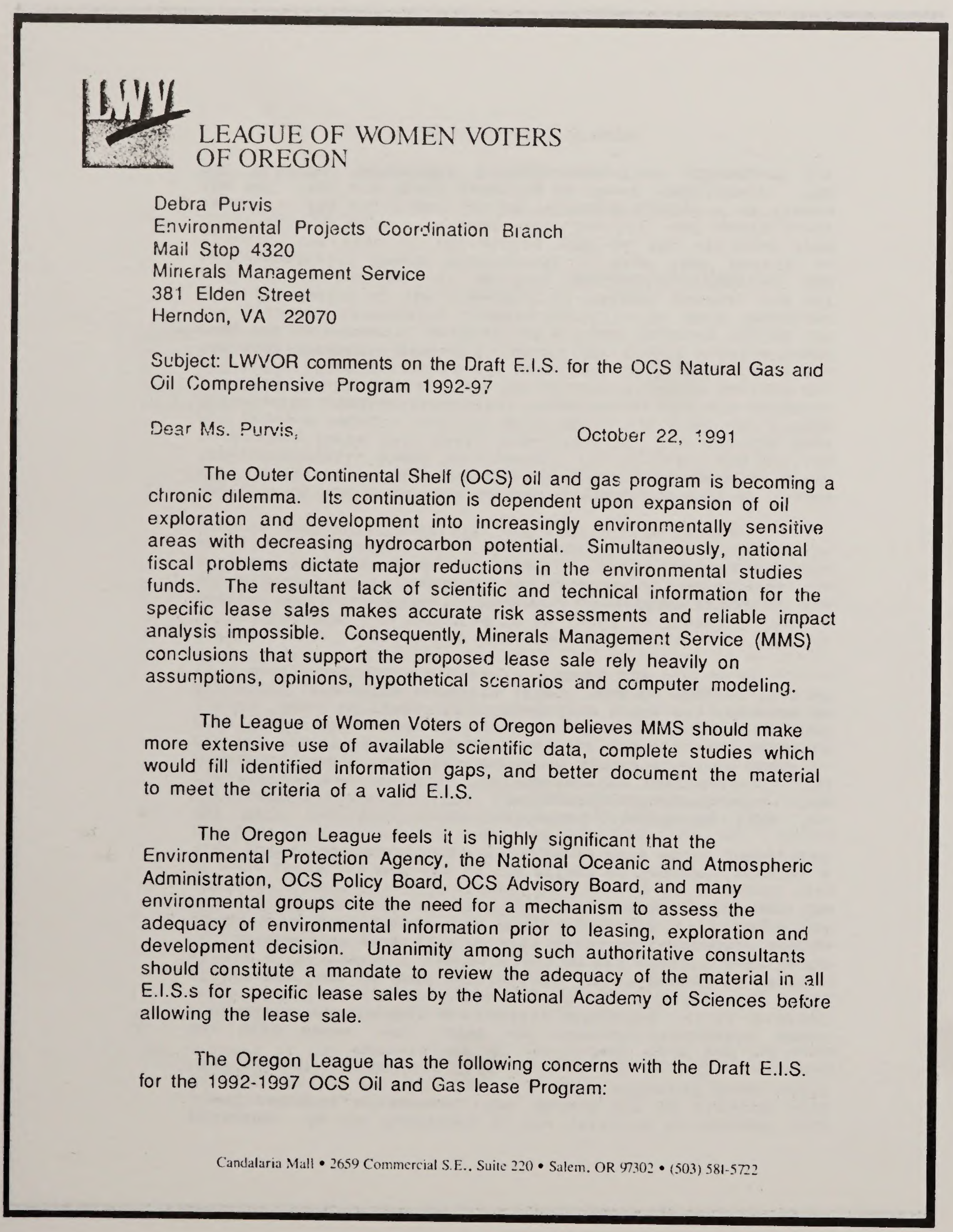
11. The crux of the issue here is that the oil industry in Alaska ha's promised the "Best Available Technology" and "Environmentally Sound Development" for 20 years and has yet to produce these very basic requirements. Lip service does not produce results and the government has does not firmly enforce the legal environmental stipulations of their permits. The TransAlaska Pipeline and the Alyeska Pipeline Service Co. are cases in point. When the president of Alyeska tells the Regional Citizen's Advisory Council for Prince William Sound that the cost-benefit analysis of a vapor recovery system for the pipeline terminal's loading facility is more important than the health of the community of Valdez, Alaska, the oil industry is backing off on Best Available Technology and Environmentally Sound Development. When they battle to increase the size of the mixing zone of the effluent from their ballast water treatment (BWT) facility and ignore their impact on the water quality in Valdez Arm instead of fixing the BWT, they are again reneging on their commitments. The oil industry repeatedly demonstrates their disregard for environmental law and human impact.

KEN opposes further drilling in the U.S. Outer Continental Shelf and encourages the Mineral Management Service and the Bush Administration to seriously pursue strict energy conservation measures and non-polluting, non-carbon based alternative energy sources. The options are there. We are simply lacking the leadership to guide this country to a self-sustainable energy future grounded in respect for our earth and not the profit margin.

Thank you for considering these comments.

Sincerely,

Kristin L. Stahl-Johnson
Network Coordinator



LEAGUE OF WOMEN VOTERS
OF OREGON

Debra Purvis
Environmental Projects Coordination Branch
Mail Stop 4320
Minerals Management Service
381 Elden Street
Herndon, VA 22070

Subject: LWVOR comments on the Draft E.I.S. for the OCS Natural Gas and Oil Comprehensive Program 1992-97

Dear Ms. Purvis, October 22, 1991

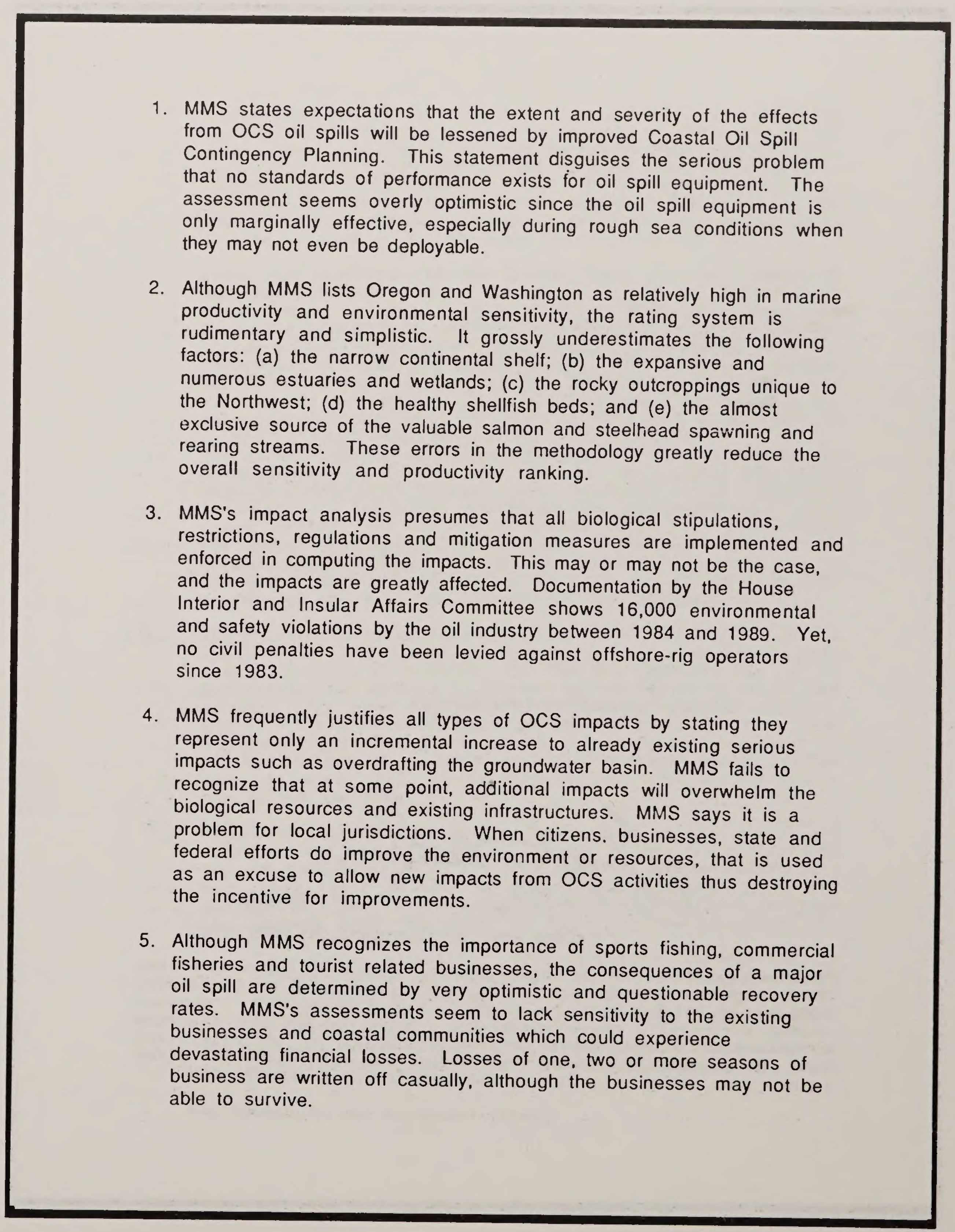
The Outer Continental Shelf (OCS) oil and gas program is becoming a chronic dilemma. Its continuation is dependent upon expansion of oil exploration and development into increasingly environmentally sensitive areas with decreasing hydrocarbon potential. Simultaneously, national fiscal problems dictate major reductions in the environmental studies funds. The resultant lack of scientific and technical information for the specific lease sales makes accurate risk assessments and reliable impact analysis impossible. Consequently, Minerals Management Service (MMS) conclusions that support the proposed lease sale rely heavily on assumptions, opinions, hypothetical scenarios and computer modeling.

The League of Women Voters of Oregon believes MMS should make more extensive use of available scientific data, complete studies which would fill identified information gaps, and better document the material to meet the criteria of a valid E.I.S.

The Oregon League feels it is highly significant that the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, OCS Policy Board, OCS Advisory Board, and many environmental groups cite the need for a mechanism to assess the adequacy of environmental information prior to leasing, exploration and development decision. Unanimity among such authoritative consultants should constitute a mandate to review the adequacy of the material in all E.I.S.s for specific lease sales by the National Academy of Sciences before allowing the lease sale.

The Oregon League has the following concerns with the Draft E.I.S. for the 1992-1997 OCS Oil and Gas lease Program:

Candalaria Mall • 2659 Commercial S.E., Suite 220 • Salem, OR 97302 • (503) 581-5722



1. MMS states expectations that the extent and severity of the effects from OCS oil spills will be lessened by improved Coastal Oil Spill Contingency Planning. This statement disguises the serious problem that no standards of performance exists for oil spill equipment. The assessment seems overly optimistic since the oil spill equipment is only marginally effective, especially during rough sea conditions when they may not even be deployable.

2. Although MMS lists Oregon and Washington as relatively high in marine productivity and environmental sensitivity, the rating system is rudimentary and simplistic. It grossly underestimates the following factors: (a) the narrow continental shelf; (b) the expansive and numerous estuaries and wetlands; (c) the rocky outcroppings unique to the Northwest; (d) the healthy shellfish beds; and (e) the almost exclusive source of the valuable salmon and steelhead spawning and rearing streams. These errors in the methodology greatly reduce the overall sensitivity and productivity ranking.

3. MMS's impact analysis presumes that all biological stipulations, restrictions, regulations and mitigation measures are implemented and enforced in computing the impacts. This may or may not be the case, and the impacts are greatly affected. Documentation by the House Interior and Insular Affairs Committee shows 16,000 environmental and safety violations by the oil industry between 1984 and 1989. Yet, no civil penalties have been levied against offshore-rig operators since 1983.

4. MMS frequently justifies all types of OCS impacts by stating they represent only an incremental increase to already existing serious impacts such as overdrafting the groundwater basin. MMS fails to recognize that at some point, additional impacts will overwhelm the biological resources and existing infrastructures. MMS says it is a problem for local jurisdictions. When citizens, businesses, state and federal efforts do improve the environment or resources, that is used as an excuse to allow new impacts from OCS activities thus destroying the incentive for improvements.

5. Although MMS recognizes the importance of sports fishing, commercial fisheries and tourist related businesses, the consequences of a major oil spill are determined by very optimistic and questionable recovery rates. MMS's assessments seem to lack sensitivity to the existing businesses and coastal communities which could experience devastating financial losses. Losses of one, two or more seasons of business are written off casually, although the businesses may not be able to survive.

6. The chronic, long-term and cumulative environmental effects from the entire gamut of impacts associated with offshore exploration, development and production remain unknown and could be very serious.

7. There is a lack of officially designated reserves, marine life refuges or Areas of Special Biological Significance (ASBS) along the coast of Oregon and Washington.

8. An unmet need is the improvement of the information on the distribution and abundance of various species, their habitat requirement for all critical life stages and their respective susceptibility to offshore oil and gas activities.

9. Extensive and unbiased scientific research must be done on actual spills and the results released to the public, state and local governments, and agencies with environmental authority.

10. The Oregon and Washington lease sale should not be considered prior to completion of a study on the effects of seismicity on offshore oil and gas exploration and development rigs, pipelines, platforms and ships. This must include risk assessments for a major subduction earthquake registering 8 to 9 on the Richter scale. Ian P. Madin, seismic hazard specialist with the Oregon Department of Geology and Minerals Industries, has said there appears to be a 20% chance Oregon will undergo a quake of this magnitude within the next 50 years. The average life of oil and gas production activities are 35 to 40 years. An earthquake of 9 on the Richter scale releases 27,000 times the energy force of a 6.

11. The benefit - cost analysis is the difference between net economic value of production and associated social costs. This assessment can not encompass aesthetics, endangerment of the unique salmon fisheries and exclusive spawning grounds, the loss of livability and desirability of coastal property, health considerations and the loss of fisheries and tourist ancillary businesses.

12. The OCS oil supply is a very finite resource that has no opportunity to become a secure, long-term energy source or one that can reduce our nation's dependence on foreign oil or enhance national security. The National Energy Policy must have greater emphasis on alternative energy sources and conservation.

The Oregon League would like to point out how the assumptions made and the scenario chosen by MMS in theorizing a 100,000 bbl spill in California severely reduced the potential impacts. The spill supposedly happens in June, July or August. The seas are relatively calm. The most significant assumption is that the mouths of the two salmon spawning, rearing and migrating streams lack water flow and a protective sand dune has formed, preventing the major oil spill from entering and devastating this critical habitat. Thus no damage is assumed to valuable sports and commercial fisheries in the risk assessment.

The anadromous pacific salmon and steelhead are especially sensitive and vulnerable to oil exposure. Three of the critical life stages of salmonids evolve around the river mouth; out-migrating smolts, nearshore feeding juveniles and adults beginning to ascend their home river to spawn. A spill entering spawning stream could cause mortality to hundreds of adults, fry and juveniles. This would affect the impacted year class for 2 to 4 years. The scenario avoids consideration of this impact.

Further, estuaries and wetlands are the most at-risk habitat, with the slowest and poorest recovery rate. Spills entering theses areas could cause community functional alterations lasting over 10 years to a rare resource. Spills could virtually eliminate relatively healthy estuaries for this period. The scenario effectively eliminates any need to include these potentially disastrous impacts.

The significance of the sea condition chosen is that, in rough sea conditions, the oil spill equipment capabilities are radically curtailed and the equipment may not even be deployable.

Logic dictates a major spill is more likely to occur in adverse weather, in rough sea conditions and in the other 9 months of the year when the salmon spawning rivers, estuaries and wetlands would be fully exposed to the oil spill. The choice of the optional summer conditions for the analysis underestimates the impacts.

The League of Women Voters of Oregon appreciates this opportunity to comment on the Draft Environmental Impact Statement, Comprehensive Program 1992-97, The Outer Continental Shelf Natural Gas and Oil Resources Management.

Sincerely,

Kappy Eaton
Kappy Eaton
President

Phyllis Cottingham
Phyllis Cottingham
Coastal Issues Chair

League of Women Voters of Ventura County
411 DEL NORTE ROAD, OJAI, CALIFORNIA 93023

October 26, 1991

Ms. Debra Purvis
Environmental Projects Coordination Branch
Mail Stop 4320
Minerals Management Service
381 Elden Street
Herndon, Virginia 22070

Dear Ms. Purvis,

The League of Women Voters of Ventura County appreciates this opportunity to provide comment on the Proposed Comprehensive Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program 1992-1997 and the Draft Environmental Impact Statement (DEIS). Our League has been concerned and involved in the OCS oil and gas development programs since 1979; especially the programs in the Santa Barbara Channel (Southern California Planning Area, Pacific Region).

We support the program objective of smaller planning areas. The number of tracts in this proposed lease sale program is significantly smaller than past programs. We believe that the smaller planning areas will facilitate the proper development of oil and gas infrastructure, reducing impacts to onshore communities and risk to the coastal environment, in the event the tracts successfully complete the approval process. While the League also supports the goals of increased environmental sensitivity and increased public participation, the program process and the DEIS have not adequately addressed these critical issues.

After our review of the DEIS, we have continued concerns related to the environmental impacts of past, present and future oil and gas exploration, development and production in the Southern California Planning Area. The Santa Barbara Channel and Santa Maria Basin have experienced the greatest amount of oil and gas exploration, development and production activity of all the OCS planning areas except the Gulf of Mexico. Environmental studies on the affects of oil and gas related activity in our coastal waters have not comprehensively identified the long-tern impact of this activity on our coastal environment; this continues to be an unmet need that was not adequately addressed in the DEIS. Areas of special environmental significance, such as the Channel Island National Marine Sanctuary, deserve protection and a complete environmental impact review. We believe the MMS should develop a separate evaluation and EIS specific to the individual planning areas in the proposed leasing plan, with emphasis on areas of special significance, to assure the most comprehensive environmental evaluation and protection of the planning areas.

We have concerns regarding the adequacy of the public participation element. One public hearing was scheduled and held in the Southern California Planning Area of the Pacific Region on September 18, 1991 in Santa Maria, California, which is a several hour drive north of Ventura County. We believe the MMS should have scheduled two public hearings in this planning area, one in the north and one in the south, to assure the people of our county an equitable opportunity to provide comment at the public hearing on the proposed program DEIS. Another issue of concern related to the public participation element of this proposed leasing program is the format of the voluminous DEIS document. The DEIS is not a "user-friendly" document, and presents a definite challenge to people familiar with EIR/EIS documents let alone the general public. We believe the inclusion of a comprehensive index in the DEIS would have greatly increased the "user-friendliness" of this document. The comment process continues to constrict rather than enhance public response to this program.

Our League continues to support the League of Women Voters of California's position on "Offshore Oil/Gas Exploration, Development, and Production", adopted by the Board of Directors in January 1988. This position "calls for changes in policies, procedures and regulations governing the OCS and Tidelands", and for "the suspension of all oil and gas offshore leasing activity until such changes are in place". In the interest of the public and environmental protection, we believe the well-advised management of our natural resources. The public participation element and the DEIS for this proposed leasing program do not currently reflect the well-advised management of our oil and gas resources in the Pacific Region.

Thank you for this opportunity to provide our comments on this proposed OCS lease sale program and the DEIS.

Sincerely,

Katie Fellows

Katie Fellows
President

KF/dn

THE MOBILE BAY AUDUBON SOCIETY
BOX 9903
MOBILE, ALABAMA 36691-9903

October 9, 1991

Environmental Projects Coordinator
(Mail Stop 4320) U.S. Dept. of Int.
M.M.S. 381 Elden Street
Herndon, VA 22070

The Mobile Bay Audubon Society has sent in comments on past MMS EIS's with extensive concerns regarding lack of knowledge regarding both short-term , long-term and cumulative impacts on marine ecosystems , and coastal resources from OCS operations in the Gulf of Mexico with special emphasis on coastal Al. and Central and Eastern Planning Areas with apparent disregard from MMS. It is felt that the No Action Alternative be the one taken at this time.

We realize the frontier natural gas finds in our area are possibly some of the largest, but until proper knowledge is gathered on the numerous unknowns ; proper enforcement actions taken against oil and gas operators; proper planning to accomodate protection for our coastal resources and the needs for offshore drilling and production activities properly co-ordinated and planned to protect our socio-economic-environmental aspects then there is the need for the NO Action Proposal.

It is suggested that before any further actions are taken MMS should put together a Supplemental EIS to address the concerns regarding the numerous unknowns identified in the past EIS's-gather from MMS, EPA Region VIII, and any other agencies reports and legal actions, fines, penalties taken against any and all petroleum operations in the Gulf of Mexico in the past five years. I know there have been illegal enforcement actions taken and that millions of dollars have been involved and closures of well heads ,etc. have been taken because of illegal actions and the public and all agencies involved need to be made aware of actions taken in order to gather data on the history of the oil companies, and the possible shortcomings of the enforcement agencies. We cannot continue to allow a possible "buddy system" or one that depends on industry to regulate itself.

Congress also needs to change the laws that allow exemptions of oil and gas drill muds and cuttings from hazardous waste definition-the industry needs to change their ways-clean up their act-and abide by the law as other industries have to-there should be no "double standards". Something is caus

causing dolphin deaths, depletion of fisheries, dead zones, etc. Components of drilling muds and cuttings could be contributing and the other waste the industry throws overboard-illegally of course, but there are reports of this occurring. EPA has addressed barging of wastes ashore and it is not cost-prohibitive. Alabama has had a "no dump policy" for years and industry has had to comply in order to drill in state waters.

Seismis and explosive operations need more exrensive discussion and debate as these operations are taking their toll on marine life-we just don't know to what extent. Rigs to reefs may not be the answer and may be causing more problems then being recognized in the cursory discussions in the EIS's. It should not be an economic savings for the industry and a public relations benefit for them-the impacts must be recognized and the alternatives considered.
Coral reefs, hardbottoms, chemosynthetic communities are not being given proper protection in the Gulf by MMS or other agencies involved. A recent example was the discovery of a very large and long scarring path in a chemosynthetic community in 2000' depth. It was apparently caused from a drill rig anchor and is being investigated, but this one destructive action is now known--how many others have occurred and not known?? What remedial action can be taken-none in this instance. It is a permanent loss to that unusual community caused by human uncaring and unknowing attitude.
The agencies and public needs to know how many wells that have been drilled and found to be productive are capped. We have heard "thousands". There should not be any further leasing of acreage until this is made known to the public in order to determine the "need" for additional leasing.

MMS states funds from leasing are placed in the treasury and also in the Land and Water Conservation Fund. The monies in the L&WCF should be released in order that additional coastal lands are acquired for migratory birds and preservation of unique systems that are being lost, because these funds are at present locked up. There are also inadequate funding for the refuges, sanctuaries, etc. that have been acquired for proper management and construction of educational facilities for the public.

This Society has sent information regarding the exploratory/production facilities in coastal Al. in state waters and on-shore in order that proper planning would eliminate duplication of especially transmission corridors from OCS operations. These documents are apparently lying on a shelf somewhere in New Orleans. It would also be important for MMS to realize Texas isn't the only state preparing for a "Navy Homeport". Mobile's is almost ready for occupancy.

I was a guest of the Dept. of Interior MMS in a weekend trip to New Orleans and I thoroughly enjoyed and appreciated the opportunity . One impression I personally gathered was the very friendly and personable attitude between both MMS persons and industry, LL&E on this occassion. It kind of bothered me and I hope that this was a wrong impression, as MMS should be careful to not be too friendly with those with whom they are supposed to be overseeing and enforcing. It would maybe help balance this impression if more individuals such as I were invited in on meetings with indurtry and MMS in order to have a more balanced and meaningful relationship. Industry may be buying the leases, but they are paying to develop the public resources.
These are just a few of the shortcomings to support the No Action and need for the SEIS. If other thoughts come forward will send as soon as possible, but wanted to get these in the record.

Sincerely,
Myrt Jones
Mrs. Myrt Jones,
President

Comments are on-OCS-Natural Gas and OIl Resource Management

COMPREHENSIVE PROGRAM 1992-1997
DEIS Vol.1 and 2

THE MOBILE BAY AUDUBON SOCIETY
BOX 9903
MOBILE, ALABAMA 36691-9903

Addendum to MMS-DEIS-Comprehensive Program 1992-1997

It was brought to my attention that our comments should include the fact the Society is adamptly opposed to any leasing of lands in the coastal plains of the Artic National Wildlife Refuge for any oil and gas or other mineral exploration or production activities.

We are on record as being opposed to the Dept. of Interior's proposal to even consider leasing these lands because of their uniqeness and sensitive nature and the natural values provided for the bird life and wildlife and the natives that depend on this area .

An expression of public concern is the national and local support for the moratoriums now in place in OCS waters. We feel this is the public's way of saying it's past time to have a proper national energy plan that provides for national security, economic security, protection of our quality of life support systems, and the desperate need to put into place conservation, energy efficient and safe automobiles, energy efficient appliances, solar, wind, geothermal, biogas, and other sources determined clean and safe.

An area that needs a thorough discussion also in the SEIS are the associated impacts of air pollution on coastal communities, land use and water impacts.

Our comments have mostly centered on the Gulf of Mexico, but SEIS should be drafted for the Pacific, Atlantic, Alaskan waters and any other OCS areas of concern. These should be individual documents for the different oceans.

NR
DC

Natural Resources
Defense Council

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October 28, 1991 **VIA FEDERAL EXPRESS**

Scott Sewell, Director
Minerals Management Service
1849 C Street, NW
Washington, D.C. 20240

Re: Proposed Comprehensive OCS Natural Gas and Oil Resource Management Program for 1992-1997

Dear Director Sewell:

Attached are the comments of the Central Coast OCS Regional Studies Program, the Natural Resources Defense Council, Greenpeace USA, Center for Marine Conservation, American Oceans Campaign, Trustees for Alaska, National Wildlife Federation, Southern Environmental Law Center, LegaSea, Clean Ocean Action and the South Carolina Coastal Conservation League on the above-captioned document. These comments were prepared principally by the Technical Review Panel of the Central Coast OCS Regional Studies Program, a group of experts on OCS-related issues, which is administered by the undersigned.

In the attached comments, we present our objections to, and concerns about, the proposed program that has been developed by the Minerals Management Service (MMS). Among other things, we detail the deficiencies of the proposed program, discuss MMS' failure to respond to the extensive comments submitted by us and others on the draft proposed program, and describe the inadequacies of the draft environmental impact statement and other analyses that have been released for public review and comment. In sum, our review of the proposed program reveals clearly that MMS has yet to accord adequate weight to the real environmental problems posed by offshore oil and gas development. Further, by refusing to respond constructively to the legitimate concerns of local and state governments and the public, MMS is guaranteeing that the conflict surrounding offshore leasing is bound to continue.

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Thank you in advance for considering these comments.

Sincerely,

Johanna H. Wald Ann Notthoff JHW

Johanna H. Wald
Administrator
Technical Review Panel

Ann Notthoff
Administrator
Technical Review Panel

COMMENTS ON THE
OUTER CONTINENTAL SHELF
NATURAL GAS AND OIL RESOURCE MANAGEMENT
PROPOSED COMPREHENSIVE PROGRAM
1992 - 1997

Submitted by the

TECHNICAL REVIEW PANEL OF THE
CENTRAL COAST OCS REGIONAL STUDIES PROGRAM

on behalf of

NATURAL RESOURCES DEFENSE COUNCIL
GREENPEACE USA
CENTER FOR MARINE CONSERVATION
AMERICAN OCEANS CAMPAIGN
TRUSTEES FOR ALASKA
NATIONAL WILDLIFE FEDERATION
SOUTHERN ENVIRONMENTAL LAW CENTER
LEGASEA
CLEAN OCEAN ACTION
SOUTH CAROLINA COASTAL CONSERVATION LEAGUE

October 28, 1991

Technical Review Panel
Administrators:

Johanna Wald, Senior Attorney
Ann Notthoff, Senior Planner
Natural Resources Defense Council

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APPENDIX A

The Central Coast OCS Regional Studies Program ("CCORSP"), the Natural Resources Defense Council ("NRDC") and nine other public interest organizations -- Greenpeace USA, Center for Marine Conservation, American Oceans Campaign, Trustees for Alaska, National Wildlife Federation, Southern Environmental Law Center, LegaSea, Clean Ocean Action and the South Carolina Coastal Conservation League[1] -- submit these comments on the "proposed comprehensive OCS natural gas and oil resource management program for 1992-1997" (hereinafter the "proposed program").

CCORSP is a cooperative effort of six California coastal counties,[2] each of which has a direct and significant interest in the manner in which the U.S. Department of the Interior ("DOI") and its Minerals Management Service ("MMS") administer the offshore oil and gas resources of this nation. NRDC and the other public interest organizations that are also submitting these comments have long been concerned about the administration of these resources by DOI and MMS. These groups submitted comments on the draft proposed program, which was released for public comment last spring and which was the first step in the multi-year, four step process by which the final 5-year OCS program will be developed. The extensive comments which were prepared by the Technical Review Panel of the CCORSP and signed on to by numerous organizations are incorporated herein by reference.[3]

I. INTRODUCTION AND SUMMARY

The Outer Continental Shelf Lands Act ("OCSLA") requires DOI to solicit the views of local governments, the public and others in developing a 5-year OCS program. The groups submitting these comments responded to the request for comments on the draft proposed program that was issued by MMS and DOI on February 25, 1991. Among other things, those earlier comments expressed considerable skepticism that DOI and MMS had in fact come up with a "new" approach to OCS leasing and decisionmaking, as they had claimed.[4] The comments demonstrated in detail that the draft proposed program, like earlier, highly controversial programs, contemplated leasing environmentally sensitive areas off the coasts of California, Alaska, Florida and the Atlantic coast;

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[1] These comments supplement the comments that these organizations may be submitting individually.

[2] The six counties are Sonoma, Marin, San Francisco, San Mateo, Santa Cruz and Monterey.

[3] Comments on the Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program 1992-1997 Draft Proposal submitted by the Technical Review Panel of the Central Coast OCS Regional Studies Program on behalf of the Central Coast OCS Regional Studies Program, Natural Resources Defense Council, National Audubon Society, National Wildlife Federation, American Oceans Campaign, Greenpeace USA, Florida Public Interest Group, Trustees for Alaska, Conservation Law Foundation of New England, Southern Environmental Law Center, Clean Ocean Action, LegaSea (April 1991) (hereinafter referred to as "TRP Comments").

[4] U.S. Department of the Interior, Minerals Management Service, "Notice of Request for Comments on the Draft Proposed Comprehensive Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management Program for 1992-1997," 58 Fed. Reg. 7717, 7719 (February 25, 1991).

that it gave excessive and unwarranted weight to industry interest in leasing everywhere except where the President's June 26, 1990 decision applied; that it overstated the environmental benefits of natural gas as well as the benefits to the nation's energy security that would result from OCS development; and that it would not significantly reduce reliance on tankers or the associated spill risk.[5] The earlier comments submitted by CCORSP and public interest organizations also raised specific questions about the draft proposed program, given the very vague description of it that had been provided, and requested that additional, more detailed information be supplied in the next iteration.[6] Finally, as requested, they provided responses to specific questions posed by MMS.[7]

MMS' responses to the comments submitted on behalf of the CCORSP and co-signers and the 699 other comments it received[8] demonstrates clearly how well founded our questions and concerns were:

- *No* changes have been made in the proposed leasing program, except for the removal of 50 blocks off the coast of Virginia at the request of the National Aeronautics and Space

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[5] *See, e.g.*, TRP Comments, pp. 10-55.

[6] *See, e.g.*, *id.* at pages 55-60.

[7] *Id.*, pp. 61-69.

[8] MMS, Pacific OCS Region, News Release dated July 31, 1991, "MMS Announces Second Draft of 5-Year Outer Continental Gas and Oil Program," p. 1 (hereinafter referred to as "MMS News Release").

Administration for "safety reasons" and the adjacent 12 tracts because they would likely be of little interest to industry[9] -- notwithstanding the concerns expressed by state agencies, governors, environmental organizations and others about the environmental values which the draft proposed program envisioned putting at risk. So much for MMS' claims of new-found environmental sensitivity.

- Most of the detailed and substantive comments submitted by CCORSP and its co-signers were ignored, as were those of the Governor of California[10] and the California Coastal Commission.[11] The comments that were acknowledged received superficial responses, thus belying MMS' claims of a new-found willingness to listen.

- The more extensive information supplied about the Area Evaluation and Decision Process ("AEDP") in the latest Secretarial Issue Document provides further evidence that what is being proposed is strictly business as usual, thus belying the claim of a "new" decisionmaking process.

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[9] U. S. Department of the Interior, Minerals Management Service, Outer Continental Natural Gas and Oil Resource Management Comprehensive Program 1992-1997, Proposal, Summary and Decision (July 1991), p. v (hereinafter referred to as "Summary and Decision").

[10] *See* letter dated August 8, 1991, from Governor Pete Wilson to Secretary of the Interior Manuel Lujan, Jr.

[11] *See* California Coastal Commission Comments to the Department of the Interior on the Proposed Comprehensive OCS Natural Gas and Oil Resource Management Program for 1992-1997 (September 27, 1991).

Accordingly, we request again that the comments submitted by the signatories to this document be responded to fully by DOI and MMS. In the remainder of these comments, we discuss first the proposed program and then the draft environmental impact statement ("DEIS")that accompanied its release.

II. COMMENTS ON THE PROPOSED PROGRAM

A. Environmentally Sensitive Areas Are Slated For Lease.

As indicated above, comments submitted by CCORSP and others on the draft proposed program demonstrated that areas slated for leasing off California, Alaska, Florida and the Atlantic coast possess extremely significant and sensitive environmental values, including threatened and endangered species, areas of great scenic beauty, and economically important fisheries.[12] Despite its deficiencies, which are discussed below, the DEIS not only confirms the ecological significance of these areas, it also reveals that significant impacts will result from MMS' leasing proposals.

For example, southern sea otters off the coast of California currently number a mere 1636 animals, according to the DEIS.[13] A spill within the range of this federally listed threatened species could "oil hundreds of [these] animals, resulting in the deaths of the vast majority of" those oiled.[14] Loss of "hundreds" of these otters could mean the end of the species. Yet MMS continues to insist on offering 87 tracts within the sea otter's range off south central California for lease. Obviously, MMS has decided that industry interest is sufficient to outweigh the clear environmental hazards oil development poses to the sensitive resources of this area, notwithstanding the language of § 18 of OCSLA, 43 U.S.C. § 1344(a).[15]

Other areas and sensitive resources will suffer similarly. In Alaska, development is "expected to result" in "considerable pup mortality and adverse effects on juvenile survivorship" among Steller's sea lions, "potentially accelerating the current population decline...."[16] The probability of one or more spills of 10,000 barrels or more occurring in the Chukchi Sea is 96% and in the Beaufort Sea 48%.[17] Substantial loss of waterfowl is expected to occur. "Oil contamination of wetland and estuarine habitats and effects on biological diversity and productivity of oil-sensitive invertebrate communities are expected to persist for more than 10 years...."[18] Despite the extreme environmental sensitivity of Alaskan OCS areas[19] and the fact that oil spill cleanup capabilities are even more limited there than elsewhere on the OCS,[20] MMS has permitted industry interest to be determinative -- even where resource estimates are negligible.[21]

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[12] See, e.g., TRP Comments, pages 12-33.

[13] U.S. Department of the Interior, Minerals Management Service, Draft Environmental Impact Statement, Outer Continental Shelf Natural Gas and Oil Resource Management -- Comprehensive Program 1992-1997, p. III-20 (hereinafter referred to as "DEIS").

[14] Id., p. IV.D-88.

[15] As these comments make clear, environmental sensitivity is not the only § 18 criterion that the proposed program fails to meet. For example, rather than ensuring an equitable sharing of developmental benefits and environmental risks, the program targets Alaska's OCS.

[16] DEIS, p. IV.D-65.

[17] Id., Table IV.D.1.a-5 at p. IV.D-13.

[18] Id., p. IV.D-189.

In the Atlantic region, according to MMS' estimates, there will be 20 "small spills" of up to 2,000 gallons; one "small spill" of 2,000-42,000 gallons; a 13% chance of a spill involving 42,000 or more gallons; and a 7% chance of a spill involving almost 1/2 million gallons.[22] In addition, some 11,000 barrels or 462,000 gallons of oil will be dumped into the Atlantic marine environment in produced water.[23]

In the Northwest, four tanker spills are assumed to occur in the pristine, environmentally sensitive and biologically

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[19] See, e.g., Summary and Decision, Table 5, at p. 25.

[20] See, e.g., U. S. Department of the Interior, Minerals Management Service, Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program 1992-1997 Decision Documents, p. 22 (July 1991) (comments of U.S. Environmental Protection Agency (EPA)) (hereinafter referred to as "SID").

[21] See, e.g., DEIS, Table IV.D.1.a-5, at p. IV.D-13.

[22] Id., pp. IV.D-12 and 13.

[23] MMS estimates that in the Atlantic Region, 3.1 million barrels (130 million gallons) of produced water per well will be generated for a total of 18.6 billion gallons. As the DEIS notes, at page IV.A-25, the EPA requires that average concentration of oil in produced water may not exceed 40 mg/l and that average oil content is 25 ppm in the Gulf. The 11,000 barrel figure presented above was calculated using the lower of these two figures and a total of 143 wells.

productive waters off the coast of Washington,[24] upon which Pacific Northwest Indian tribes depend,[25] where the Olympic Coast National Marine Sanctuary will be designated and where some 50,000 seabirds died from the 1988 spill involving the barge Nestucca.

The rationale proffered by MMS for including all of these fragile areas and not excluding any on the ground that the environmental risks are too great simply cannot withstand scrutiny. In essence, MMS argues that it is easier to take areas out during the leasing process than it is to put them in, particularly given what it asserts is the increased influence of coastal states and local governments that comes with completion of environmental and other studies later in the process. Certainly past experience does not support this claim. On the contrary, the history of the OCS program reveals that, once an area is targeted for leasing, MMS will proceed to lease it absent some supervening event such as a Congressional moratorium or, more recently, presidential action.

Thus, our joint recollections of the program over the past decade reveal no instance in which the contents of environmental statements, comments by other federal agencies with jurisdiction over marine resources, objections by governors, comments by local governments or an announced need to comply with state coastal laws led to the cancellation of a sale once proposed. In fact, the National Academy of Sciences found in its 1989 study that "DOI has never implemented the procedures provided by OCSLAA for lease cancellation, and so a decision to lease is generally perceived as tantamount to a decision to develop and produce...."[26] What is more, although as noted above MMS had an opportunity to overcome this dismal record and substantiate its promise of more and better consultation by making meaningful changes in the draft proposed program, it failed to do so.

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[24] See, e.g., U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Draft Environmental Impact Statement, Olympic Coast National Marine Sanctuary (1991).

[25] See Potential Effects of OCS Oil and Gas Exploration and Development on Pacific Northwest Indian Tribes: Final Technical Report, MMS 91-0056 (August 1991).

If DOI and MMS were truly committed to avoiding areas where the risks of development are too great, it would not include the sensitive areas we have identified in the proposed program. Nor would it continue to insist on sacrificing Alaska as it has done. The resources of Alaska and the other areas deserve real protection from leasing and development, not unsubstantiated references to "environmentally sensitive" oil and gas development and unidentified lease stipulations that will allegedly mitigate the adverse impacts of development.

B. Tanker Trips And Spill Risks Have Not Been Meaningfully Reduced.

Although MMS is continuing to call its 5-year OCS program a "natural gas and oil program," the fact is the agency projects that oil will be produced from all of the planning areas that are

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[26] See National Academy of Sciences, The Adequacy of Environmental information for OCS Oil and Gas Decisions: Florida and California (1989) (hereinafter referred to as "NAS, 1989 study") (emphasis added), p. 14.

leased under the new program. Outside the Gulf of Mexico, most of that oil will be transported by tanker, according to MMS' own environmental analysis. Indeed, all oil produced in the mid- and south Atlantic planning areas[27] as well as all oil produced in Alaska will be transported by tanker.

More specifically, of the 23 sales scheduled under the new program, 10 involve 100% tanker transport of oil. That transport will likely result in spills, even according to DOI. Indeed, DOI assumes that 10 tanker spills of 1.3 million gallons each will occur as a result of the new 5-year program.[28] If this estimate proves correct, the equivalent of the Exxon Valdez spill will be spilled from tankers alone under this program.

What is more, it must be acknowledged that even the oil that is transported via pipeline is not free from risk of spilling. Of the major oil spills (i.e., those of more than 1,000 barrels according to MMS' definition) that have occurred since 1980, three of four have been pipeline spills, according to DOI's own records. For example, in 1988, an OCS pipeline off Galveston spilled 1/2 million gallons, while one off Ship Shoal spilled almost 3/4 million gallons in 1990. Indeed, the DEIS assumes six major pipeline spills of up to 840,000 gallons each will result from the proposed program.

Nor are oil pipelines the only pipelines that incur spills. On October 3, 1989, the fishing vessel Northumberland struck and ruptured an offshore pipeline used for transporting natural gas from four offshore production platforms. Gas escaping from the pipeline ignited, causing an explosion and fire which engulfed the Northumberland. Eleven of its 14 crewmembers died. On July 24, 1987, the fishing vessel Sea Chief struck and ruptured a CSX Transportation Company pipeline in Louisiana waters, killing two crew members. In fact, since 1985, 21 incidents involving marine vessel collisions with offshore pipelines have been reported to the Department of Transportation's Office of Pipeline Safety.[29]

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[27] DEIS, p. IV.D-11.

[28] Id., pp. IV.D-12 - IV.D-15.

C. Oil And Gas From The OCS Will Not Contribute Meaningfully To National Energy Security.

That the energy resources of the OCS are not the key to the nation's long-term energy security would appear to be indisputable. The amount of oil and gas in unleased areas outside the central and western Gulf of Mexico is roughly equal to 13 months worth of oil at current U.S. consumption rates. This would be an insignificant contribution to our energy security.

What is more, unleased OCS oil and gas outside the central and western Gulf represents a tiny fraction -- less than 4% -- of the nation's identified and economically recoverable oil and gas. Foregoing all further development on the OCS outside the central and western Gulf would leave 96% of the nation's oil and gas

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[29] Statement of Dr. John K. Lauber, NTSB, before Merchant Marine and Fisheries Subcommittee on Coast Guard and Navigation, New Orleans (February 26, 1990).

available. This hardly amounts to a "lock up" of the nation's energy reserves.[30]

The way to avoid spills and other environmental damage from OCS activities and imports is to reduce our need for oil altogether. And we could do so. For example, last year the Department of Energy projected that up to 15 billion barrels of oil could be recovered under present economic conditions with currently available and proven technologies, if a well-designed enhanced recovery technology transfer program were implemented. Raising fuel economy standards would also produce significant savings. Increasing the present standards to 40 mpg for cars and 30 for light trucks could save 20 billion barrels of oil equivalent by 2020 -- more than three times the amount of oil MMS believes lies in unleased areas of the OCS outside the central and western Gulf of Mexico. Still other energy efficiency improvements could save vast amounts of oil that would dwarf reserves outside those parts of the Gulf.[31]

The United States accounts for over 30% of the world's consumption of oil, but only about 4% of its resources. That the nation will run short of oil is a foregone conclusion. The "drain America first" policy that is the foundation of the proposed program will only bring us closer to that day of reckoning, ultimately undermining, rather than enhancing, national energy security.

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[30] Cf. SID, p. 99.

[31] See, e.g., Watson, Robert K., Looking for Oil in All the Wrong Places (NRDC, 1991), submitted as Attachment 4 to TRP Comments.

Finally, not only is it clear that OCS development contemplated by the proposed program will do virtually nothing for the nation's energy security, it is equally clear that the avowed commitment to such security is merely rhetorical, as evidenced by the fact that the Department of Energy is now encouraging the export of California crude. Either the Administration believes we need oil for security purposes or it believes we don't. The administration cannot have it both ways.

D. The Treatment of Demand Side Resources Is Inadequate.

After reading the proposed program, we are more convinced than ever that key decisionmakers in the Administration are simply unwilling or unable to recognize energy efficiency as a fungible resource, fully substitutable for supply side resources. While utilities in more than a dozen individual states have been busily acquiring cost-effective, reliable energy savings from (and for) their customers, federal agencies continue to perceive conservation in its most anachronistic sense -- as a plea for self-sacrifice and a necessary evil that must be invoked to gain political approval for new supply-side investments.

Saved energy, whether in the form of oil, natural gas, or electricity, is inherently fungible. Each gallon of oil that remains unused by one American consumer is available to be used by another, thereby displacing one that would need to be found, drilled, stored, transported, refined, transported again, and

ultimately burned, with adverse environmental effects accruing at each step of the way. Yet MMS' proposal asserts that supply and demand resources cannot be interchanged. However flawed the argument, MMS has framed it as blithely and succinctly as any federal document has ever managed to:

> Although these conservation savings are very attractive and can be recommended to appropriate organizations and agencies for further study, nothing in the analysis provides any basis for recommending these alternatives as actual replacements for OCS natural gas and oil production.[32]

Does it make sense to drill for one resource and merely study another, even if it is admittedly "attractive"? If reductions in demand from efficiency measures cannot be used to offset or replace proposed supply projects, where do they go?

Such fantastic statements frame the nature of the disagreement between MMS and the nation's burgeoning efficiency enterprise in the clearest possible terms. If the Department of Interior wishes to see new drilling occur, then the opportunity to save large amounts of oil and gas through efficiency will naturally be seen as supplemental -- reducing someone else's demand for energy but not obviating the need for favored new supply projects.

If, instead, the federal government believes its role is to minimize the total societal cost of providing secure energy services to the nation's citizens,[33] then it may quite possibly come to very different conclusions. Within such a least-cost paradigm, no one resource is revered for its own sake. Each must face a rigorous test of fiscal worth.

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[32] SID, p. 19.

The National Energy Strategy ("NES") set out, at least rhetorically, to be such a process. Along the way, however, it was absolutely gutted by a White House that couldn't bear to see certain demand side options retained and certain supply side options excluded. As a result, it forms a very shaky foundation on which to build arguments for costly new supply.

Most appalling is the MMS restatement during the discussion of higher automotive fuel economy of the NES claim that "these and other similar measures were all carefully examined in the development of the National Energy Strategy."[34] We contend that what is needed is more than mere examination of these options. The reasons for which they were discarded must also be considered -- i.e., not because the computer models indicated they were expensive or ineffectual options, but because the White House simply couldn't abide them. As it stands, the implication that such measures failed on the merits is simply untenable.

Senator Bryan's bill to increase automotive fuel economy by 40% -- S. 279 -- is at the center of the current debate over demand side alternatives to offshore oil development. The

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[33] This includes not only federal budget outlays and receipts, but total private costs and benefits, and total external costs not individually borne by the consumers of energy.

[34] SID, p. 9.

Department of Energy's savings estimates for that bill have now been called into question not only by the environmental community, but also by Congress itself. In a recent report, the Congressional Office of Technology Assessment concluded:

> [T]he DOE baseline estimate of 1 mmbd fuel savings from S. 279 by 2010 is analytically correct but very conservative.... [V]irtually all [of its assumptions] push the final result towards a low value. In our view, the likelihood of such uniformity is small.... OTA believes that the "most likely" value for year 2010 savings lies between 1.5 and 2 mmbd.[35]

Would an analysis of the potential savings from fuel economy including these new findings also provide "no basis for recommending these alternatives as actual replacements for OCS natural gas and oil production"?

Although the NES identified a significant technical potential for conservation, it left some of the most promising options off the table and committed few resources to securing others supposedly "locked in" to the baseline. As a result, MMS' statements like the following reflect a fundamental misunderstanding of the NES process and the likelihood that its baseline will be achieved:

> Government actions to promote conservation have already caused improvements in automobile fuel economy (through Corporate Average Fuel Efficiency standards), home appliances (through labeling and standards), and building shell insulation (through building standards). As a result, most of the available low-cost conservation improvements consumers had overlooked are

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[35] U.S. Congress, Office of Technology Assessment, Improving Automobile Fuel Economy: New Standards, New Approaches, OTA-E-504 (1991), p. 14.

> already being made or are likely to be in the year 2000 baseline.[36]

Is MMS aware that the National Energy Strategy commits the nation to an increase in electrical generation of 30% over the next two decades? Perhaps it is no less surprising that a strategy which leaves us heavily dependent on oil imports and consuming 10% more oil over the same period would characterize itself as follows:

> [T]he National Energy Strategy would reduce the importance of oil to the U.S. economy -- through conservation, efficiency improvements, and oil displacement by the use of improved technologies and alternative fuels.[37]

By contrast, the Alliance to Save Energy, American Council for an Energy Efficient Economy, the Natural Resources Defense Council, and the Union of Concerned Scientists have articulated a clear path to net reductions in petroleum demand in America's Energy Choices: Investing in a Strong Economy and a Clean Environment, an alternative national energy strategy released in October 1991. We commend its principal findings to MMS analysis.

Other faults of the NES are apparent in MMS' discussion of its conclusions. For example, the NES analysis indicated that "current statutory and regulatory impediments may be decreasing natural gas use by about 1 trillion cubic feet (tcf) each year. To remedy this situation, the Federal Government enacted the

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[36] SID, p. 19.

[37] Id., p. 9.

Wellhead Decontrol Act...."[38] While we agree that natural gas can be an environmentally preferable substitute for other fossil fuels, we find no evidence that MMS intends such substitution. Indeed, the analysis suggests that greater consumption of domestic natural gas is an inherently preferable policy, even if such expansion leads to significant increases in greenhouse gas emissions.[39]

MMS has also stated that "[a]s the offshore program expands, materials are needed from all parts of the country for the exploration, development, and production of natural gas and oil. Jobs are created and revenue is generated throughout the U.S. economy."[40]

While the argument that building and operating short-lived offshore oil rigs creates jobs is consistent with other recently written impact studies for large energy supply projects, it is no more persuasive. In both cases, the majority of the jobs are inherently "boom and bust" by nature, serving to disrupt local economies more than sustain them. Energy supply projects routinely require far more labor to construct than to operate. This is no doubt one of the reasons that the Bonneville Power

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[38] Id., p. 12.

[39] Though highly efficient electric generation with natural gas can offset CO_2 emissions for less efficient coal or oil-fired power plants, it can also lead to dramatic increases in emissions of methane, an extremely potent greenhouse gas.

[40] SID, p. 15.

Administration, another federal agency, determined in a 1984 study:

> The literature generally concludes that expenditures on conservation generate more regional employment opportunities than expenditures of the same size on power plant construction and operation. There are several contributing reasons for this. First, conservation programs tend to be more labor-intensive than construction programs. Second, conservation programs are less dependent on imports from other regions than is the construction of power plants.[41]

As a result, we conclude that comparable investments in demand-side alternatives would produce a panoply of jobs that are equal or better in quality, more diverse and more long-lived than those produced by equivalent investments in offshore oil development. As long as MMS lacks evidence to the contrary, we do not believe its statements about relative employment impacts are credible.

E. The Economic Analysis Is Inadequate.

Dr. Michael Kavanaugh reviewed the proposed program on behalf of the CCORSP. He had previously reviewed the 1982 and 1987 programs for NRDC and others. In his review, attached hereto as Appendix A, Dr. Kavanaugh details the serious deficiencies in MMS' economic analysis and, in particular, its analysis of price effects, its choice of a single discount rate to represent both industry preferences for cash-flows and the

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[41] Bonneville Power Administration, Employment Effects of Electric Energy Conservation, (report prepared by Charles River Associates for US Department of Energy), Contract # DE-AC79-83BP39210, April 1984.

public's preference for environmental goods, and its omission of a delay analysis.

III. LOCAL AND STATE GOVERNMENTS AND MEMBERS OF THE PUBLIC HAVE BEEN SLIGHTED -- AGAIN

Despite the repeated commitments to more and better consultation and public participation that accompanied the release of the draft proposed program and the instant proposal, local and state governments and members of the public are still being slighted by MMS. First, as indicated above, MMS failed to make any changes in the leasing proposals presented in its draft proposed program in response to concerns expressed by elected officials, state agencies or members of the public.

Moreover, MMS ignored requests that relevant information about key elements of its proposal which was not provided before be provided at this time. For example, CCORSP, NRDC and others requested that MMS identify the criteria that were used to assign different planning areas to different categories and to decide whether to establish a cap on leasing and if so, how large a cap should be set.[42] Such information is essential to evaluate the proposal: the public is entitled to know on what grounds MMS is willing to exclude areas from consideration for leasing or limit sales, now and in the future. This information should have been included in the draft proposed program. That it still has not been provided effectively demonstrates how hollow MMS' claims of meaningful consultation are.

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[42] See, e.g., TRP Comments, pp. 56-58.

The public is also entitled to know how MMS intends to comply with the recommendations and findings of the National Academy of Sciences regarding the current _in_adequacy of scientific information for leasing decisions.[43] Yet this information too has not been provided, notwithstanding repeated requests that it be supplied[44] as well as repeated admissions in current program documents that existing ecological knowledge is inadequate.[45] And, much of the information that was supplied is either virtually useless or confirms that a new approach to leasing decisions has yet to be developed.

For example, CCORSP, NRDC and others requested that MMS provide a description of the decisionmaking criteria that will be used in the "new" AEDP.[46] MMS purported to comply with that request,[47] but the information supplied is so vague and generalized as to be meaningless. According to MMS, the decision whether to issue a call for information and nominations/notice of

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[43] _See_ NAS, 1989 Study.

[44] _See, e.g._, TRP Comments, pp. 58-59.

[45] For example, Appendix 10 of the SID concedes that little is known about the effects of oil spills on submarine canyons, highly diverse live bottoms, whales at pages 10-C-15, 10-C-20, 10-C-39, respectively. As discussed in the Section -- of these comments, however, the lack of such information does not appear to have prevented MMS from concluding that adverse impacts will not occur from spills and other effects of oil development.

[46] TRP Comments, pp. 10-12.

[47] _See, e.g._, MMS, News Release.

intent to prepare an EIS will be based on whether there is "sufficient information to proceed with planning and consultation efforts" in the short term.[48] Can MMS really believe that this "criterion" is at all helpful to persons concerned about OCS development? Can MMS really believe that this criterion will be helpful in decisionmaking?

Finally, still other information underlines how little is new in the "new" program. For example, although MMS has asserted it is committed to addressing the question of adequacy of information, a key and controversial issue, at the outset of lease sale planning,[49] the "information base review," which is supposed to fill that function, is not identified as a "[m]ajor decision point" in the present description of the process.[50]

IV. THE DEIS SUFFERS FROM NUMEROUS DEFICIENCIES

A. _The Level Of Analysis Is Too Broad_.

The DEIS was ostensibly prepared for the purpose of assisting in decisions about the timing, location and scope of the proposed 5-year program. However, its utility is severely compromised by the generality of its analyses and the highly questionable assumptions upon which they were based. Indeed, it is quite difficult to imagine how the DEIS could shed much, if any, light on the key decisions that need to be made now.

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[48] Summary and Decision, p. 61.

[49] _See, e.g._, SID, p. xx.

[50] _See, e.g._, MMS Pacific OCS Region, Special Information -- Area Evaluation and Decision Process (AEDP) for the Minerals Management Service's 1992-1997 OCS Program (July 31, 1991), p. 2.

For example, in discussing the effects of oil spills on the remaining population of southern sea otters, the DEIS concludes that "hundreds" of otters might be oiled, the "vast majority" of which would die, or that only "tens" might die if the spill were to occur in one particular place.[51] Because of the non-specific nature of these numbers and the huge disparity between them, it is hard to believe that decisionmakers will actually find this information to be useful. Similarly, the DEIS concludes that oil spills ranging in size from 7,000 to 30,000 barrels will have the same effects on tourism and recreation in the Pacific OCS region[52] -- a conclusion which would appear to be based on the untenable assumption that there is no relation between the size of a spill and the area affected or the duration of the effect.

As a result of its generality, the DEIS masks the sensitivity of, and impacts to, discrete resources that have been proposed for leasing. Were the impact assessments and descriptions of biological resources more focused and detailed, the EIS would provide meaningful assistance to those charged with determining whether to lease a particular area of the OCS.

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[51] DEIS, p. IV.D-88.

[52] See id., p. IV.D-64.

B. Essential Ecological Data Are Lacking Or Have Been Ignored.

As the National Academy of Sciences has concluded,[53] the U.S. Congress has recognized,[54] and MMS has acknowledged, the lack of necessary environmental and other information is a contributing cause to the controversy that surrounds the OCS program. Program documents concede that important and relevant ecological information is lacking, as noted previously. In turn, the lack of such information undermines the DEIS' analysis and conclusions.

The DEIS contains much information that lacks any biological basis and/or that is unsubstantiated. For example, the DEIS repeatedly makes assumptions that are simply unwarranted. These include the assumptions that bowhead whales will react to platforms as do gray whales,[55] and that fin whales will not "react much differently to noise" than either bowheads or grays.[56] There are no scientific data that we are aware of that substantiate the underlying premise of these assumptions -- namely, that if you've studied one whale, you've studied them all.

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[53] NAS, 1989 study.

[54] See, e.g., Report of the House Committee on Appropriations, Department of the Interior and Related Appropriations Bill, 1992 (H.R. 102-116).

[55] Id., p. IV.D-56.

[56] Id., p. IV.D-59.

In addition, the DEIS makes assertions about the impacts of development that are unsupported and in fact unsupportable. It predicts, for example, the length of time that will be necessary for such species as Steller sea lions, Northern fur seals, sea otters and polar bears to recover from oil spills and other disturbances associated with development without reference to any scientific studies.[57] It contains an unsubstantiated assertion that California estuaries could take "up to ten years" to recover from an oil spill[58] -- an assertion which, like many others, may seriously underestimate the environmental sensitivity of the resource as well as the resulting impacts. The DEIS also includes the unjustifiable assumption that requirements for oil spill response and equipment testing will reduce estuarine damage from spills.[59]

Other data problems include the failure to use the most up-to-date information available. For example, the DEIS relies on out-of-date population figures for wildlife species such as blue, sei and sperm whales. It also fails to acknowledge that the U.S. Fish and Wildlife Service has undertaken a formal review of the status of the spectacled eider and the Steller's eider in response to the filing of a petition to list both species as endangered,[60] despite the relevance of the beleaguered state of these species and the potential impact listing could have on proposed leasing activities. Additionally, damage assessment information obtained in the wake of the Exxon Valdez catastrophe, which indicates impacts ranging from a low of $3 billion to a high of $15 billion to the Prince William Sound environment,[61] does not appear to have been incorporated into the proposed program's impact analyses.

C. Impact Conclusions Are Unsubstantiated.

The DEIS paints an overly optimistic picture of the effects of oil and gas leasing throughout the OCS. Among the many examples that could be cited are the following:

Effects of vessel traffic in the vicinity of walrus herds are potentially much more serious than described.[62] Indeed, permanent abandonment of walrus haulout sites has been documented.[63] The same is true of the description of the effects of the Exxon Valdez spill on harbor seals.[64] Notwithstanding the

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[57] See id., pp. IV.D-63, IV.D-74, IV.D-80, IV.D-82.

[58] Id., p. IV.D-601.

[59] Id., p. IV.D-191. Experience reveals that oil spill response capability is in fact limited. For example, even if seas are calm in California, which they rarely are, very little oil is recovered. Accordingly, the nature and extent of oil spill effects must be minimized for any reason, including required spill response capabilities.

[60] See 56 Fed. Reg. 19073 (April 25, 1991).

[61] See, e.g., Michael Parrish, "Secret Studies Put Spill Damage at $15 Billion," Los Angeles Times (October 8, 1991).

[62] See DEIS, p. IV.D.78.

[63] See Fay, F.H. et al. 1984. Modern populations, migrations, demography, trophics and historical status of the Pacific walrus. In Environmental Assessment AK OCS, V37:231-376. NOAA/OCSEAP.

[64] Compare DEIS, p. IV.D.77, with the report entitled Summary of Effects of the Exxon Valdez Oil Spill on Natural Resources and Archeological Resources (March 1991), p. 6, issued by the U.S. District Court.

National Academy of Sciences' conclusion that the physical oceanography data needed for sound assessments of oil spill impacts were lacking for southern California, MMS has predicted such impacts and concluded they are acceptable.

Still other impacts appear to have been overlooked. For example, the DEIS does not look at the impacts of the proposed program on benthic communities offshore Alaska, as it does for the Pacific OCS and other regions. Similarly, the DEIS discusses only direct impacts associated with spills and disturbance to individuals and populations of ice seals (ringed, bearded, spotted and ribbon seals) and Northern fur seals. The potential loss of habitat for these species is ignored.[65] In like manner, the DEIS contains no discussion of potential impacts to critical feeding areas of Steller's sea lions, but focusses only on potential impacts to individual animals on rookeries or haulouts. The absence of these analyses clearly undermines the impact conclusions presented in the DEIS.

In many cases, impact conclusions appear to be based on contradictions. For example, the DEIS states that water quality criteria will not be exceeded beyond 100 M from platforms in Alaska[66] -- but in the Pacific region the distance is 500-2000 M. The assertion that "[t]here is an 18-57% chance that one or more oil spills of 10,000 bbl or greater will occur throughout the

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[65] See DEIS, pp. IV.D-73 - 74, IV.D-76.

[66] Id., p. IV.D-26.

range of the bowhead"[67] is inconsistent with spill estimates provided elsewhere in the document.[68]

In still other cases, where MMS has conceded the lack of information, it has not permitted such concessions to stand in the way of making conclusions about the environmental effects of oil leasing and development. For example, the DEIS concedes that there is no information available about the impact of drilling and construction activities on sea otters. Notwithstanding this lack of information, it concludes that these activities will have no impacts on otters.[69]

Finally, at a number of places the DEIS asserts that impacts will be mitigated through the imposition of lease stipulations that will be developed in the future. Whether or not such stipulations will in fact mitigate impacts to an acceptable level is a key question and one that must be analyzed in accordance with the requirements of NEPA, not assumed.

D. Cumulative Impacts Have Not Been Analyzed.

Although the DEIS accurately describes what a cumulative impact analysis is supposed to do,[70] it does not contain an analysis which satisfies the description. More specifically, the document does not present an assessment of the additive effects of past, present and reasonably foreseeable actions.[71] Instead, for the most part, the sections entitled "cumulative impacts" merely list the sources of impacts. As the court noted in Natural Resources Defense Council, Inc. v. Hodel, 865 F.2d 288, 299 (D.C. Cir. 1988), such "perfunctory references do not constitute analysis useful to a decisionmaker in deciding whether, or how, to alter the program to lessen cumulative environmental impacts." They should be replaced with true cumulative assessments.

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[67] Id., p. IV.D-58.

[68] Compare Table IV.D.1.a-5.

[69] Compare id., p. IV.D-87 with id., p. IV.D-89.

[70] See p. IV.D-446.

V. RESPONSES TO SPECIFIC QUESTIONS

MMS has again asked for responses to specific questions. This section contains our responses.

MMS has asked for comments on the core § 18 analyses which were released in connection with the proposed program. As indicated above, we believe the economic analyses are flawed. As also indicated, it is obvious that environmental and coastal zone impacts have not been given equal weight with the potential for oil and gas resources. On the contrary, it is clear that there are only two factors that matter to MMS and DOI: where industry wants to lease, and which areas were set aside by the president. The latter are set aside under the proposed program and the former are scheduled for lease. Thus, as MMS itself explains, "[t]he selection of planning areas under consideration for

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[71] Id.

leasing generally conforms to industry's level of interest,"[72] with any level of interest apparently sufficing.

MMS also asked for comments on sensitivity analyses which it described. We believe that preparation of the analyses described would be useful. However, no such analyses appeared in the program documents.

Comments were also requested again on questions posed in the Notice of Request for Comments on the draft proposed program. Our responses to those questions have not changed.[73] With respect to the criteria proposed for determining the adequacy of information for program decisions, we contend that they are vague and lacking in utility. We further contend that program documents as well as the NAS reports reveal that existing environmental and socio-economic information is generally inadequate. Proceeding in the absence of adequate information is guaranteed to perpetuate controversy over OCS leasing decisions.

VI. CONCLUSION

The proposed program is an all-too-familiar iteration of the draft proposal and it perpetuates most of the earlier version's inadequacies. By continuing to plunge ahead with federal leasing plans in spite of well-documented data gaps, consultation failures, impact analysis flaws and risk assessment errors, MMS is ensuring that the proposed 5-year OCS program will generate as much controversy as earlier programs have generated. MMS' reliance on industry interest as the over-riding criterion for area selection undermines any claims that environmental sensitivity and/or regional concerns were factored into the decisionmaking process.

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[72] Summary and Decision, p. 19.

[73] TRP Comments, pp. 61-70.

MMS' demonstrated lack of responsiveness to public, local and state government concerns jeopardizes the environmental resources of the nation's Outer Continental Shelf as well as thwarts the consultation goals of the National Environmental Policy Act.

Richard Kranzdorf, PhD.
160 Graves
San Luis Obispo, California 93405
(805) 543-5578

Oct 31

Director
Minerals Management Service
Att'n.: Branch of Environmental
Projects Coordinator
381 Elden St.
Herndon, VA 20070-4817

October 26, 1991

Dear Director:

As a member of the Executive Board of the Ocean Sanctuary Coalition of San Luis Obispo, my written comments of September 18, 1991 are being submitted as part of the County of San Luis Obispo's package. Just to make sure that the comments will not be overlooked, I am also submitting our organization's comments to you directly.

This letter will also serve as an addendum and will focus exclusively on process, something I only briefly mentioned on page two of the written comments. To itemize my concerns with the MMS Santa Maria hearing on September 20:

1. The day finally selected fell on Yom Kippur, the holiest day of the year for Jews, and made it extremely difficulty for people such as myself to attend (indeed, several people I know chose not to do so). The hearing, I might add, was originally scheduled for September 19 but was inexplicably moved;

2. The hearing was scheduled for Santa Maria, the only town in Santa Barbara and San Luis Obispo Counties which could remotely be called pro-oil;

3. Even though only one day was allotted for the hearing, and even though one could have reasonably predicted there would be much interest in attending and commenting, the session did not begin until 1 P.M.;

4. The room chosen had a capacity of about 500 people even though the last hearing in California which was held at Fort Bragg in 1988 resulted in 3500 turning out;

5. People were never told they would have to call long distance to the regional office in Camarillo, CA to be able to speak; no one who did not call to reserve time was able to comment;

6. Until the evening session, the room was sealed to those not able to gain entry to the room, thus further "disenfranchising" a goodly number of those who wished to attend the session;

7. By holding the session on Wednesday, the middle of the week, those from beyond the local area who wished to appear, were in most cases unable to do so.

RECYCLED PAPER TO HELP PROTECT THE ENVIRONMENT

Because of the annoyance and anger felt by many in the audience over process and substantive items, the panelists promised to urge that MMS/Washington hold a second hearing, preferably in the San Luis Obispo area. Not surprisingly, MMS/Washington turned down this request, giving the following reasons:

1. The Regional Director of MMS had appeared at a League of Women Voters' forum on September 12. The forum was never billed as a hearing, received relatively little publicity, with the Regional Director one of only six people on the panel. Furthermore, the forum began at 7:30 PM and ended at 9 PM, with set opening and closing statements taking up most of the time;

2. MMS says written responses carry as much weight as oral comments. MMS is knows full well that only a fraction of those who would attend - and comment - at a hearing would write stating their concerns;

3. MMS says that the lease sale would only involve 87 tracts in a small geographic area so why the concern? This statement shows the arrogance of MMS/Washington and the gap in perception between those in Washington and those in the local area. It also shows that MMS/Washington has not seriously considered, or even wishes to consider, the central contention of local governments: That the Santa Maria Basin is a separate and irreplaceable ecosystem that should be studied as a whole and not as part of the Southern California region.

I was fortunate enough to be one of those able to speak in Santa Maria. The loudest cheers of the audience during my remarks came when I commented that the procedural items referred to above show that the government "just doesn't care about any agenda except its own."

Ultimately, whether drilling is allowed in any of the 87 tracts will not be based on the qualities of the area but on the political tradeoffs as determined by MMS and those from the President on down who make policy. On that, we on the Central Coast are under no illusion. No doubt, we will be in ongoing conflict as you go forward with your leasing objective. You may be sure that we will remain active as long as MMS continues on its present course.

Sincerely,

Richard Kranzdorf

Dr. Richard Kranzdorf
Executive Board
Ocean Sanctuary Coalition of
San Luis Obispo County

cc: Congressman Leon Panetta
Congressman William Thomas
Congressman Robert Lagomarsino
SLO County Supervisor David Blakely
Monterey County Supervisor Karin Strasser Kaufman

Oil Reform
Alliance

D
NOV 7 8 03 AM '00

October 29, 1991

Scott Sewell
U.S. DOI/MMS
18th & C St NW Rm.4215
Washington D.C. 20040

Dear Mr. Sewell;

The Oil Reform Alliance (ORA) appreciates the opportunity to comment on the draft OCS comprehensive program (1992-1997). We are an Alaskan-based coalition of twenty organizations (including commercial fishing, environmental and community service) and about 100 individual members which formed in June 1989 after the Exxon Valdez oil spill. We are dedicated to reforming oil industry practices that adversely affect communities on social, economic, and environmental levels.

It is quite clear from the proposed 5-year program that Alaska, particularly the arctic OCS, is to be the prime target of intense oil and gas development: about 50% of the OCS lands being offered to the oil industry on a nationwide basis are in Alaskan waters.

A large number of OCS tracts along the continental U.S. are currently closed under a 10-year moratorium largely because of public pressure due to concerns for environmental safety. Remarkably, MMS instead proposes to lease tracts in Alaska where the environment is characterized by extremely harsh weather conditions (prolonged ice cover in the arctic, winter darkness, frigid temperatures, high winds and waves, low visibility, etc.) and an extremely rich biodiversity (a wealth of marine mammals, commercially important fish species, and seabirds/waterfowl).

Our membership includes many small boat fishermen involved in commercial and some subsistence fishing for salmon, herring, halibut, crab, Pacific cod and other bottomfish. The seafood industry in Alaska is the state's largest private basic employer and the primary industry in most rural coastal communities. Some of the regions which currently rely heavily on the seafood industry as an economic base correspond to areas proposed for lease sales.

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Impact of an oil spill on the commercial fisheries and its support sectors in these areas have not been satisfactorily evaluated - and can not be until the Exxon Valdez oil spill data and interpretive analyses are released to the public.

Our position is that Alaska's OCS, including the arctic waters, deserve the same scrutiny in terms of socioeconomic impacts and environmental safety of oil and gas activities that other regions of the country receive PRIOR to lease sales.

The National Academy of Sciences has not yet completed its review of the scientific database that MMS uses to make leasing decisions. However, in a similar review for California and Florida OCS leasing decisions, NAS found the "available scientific and technical information were inadequate and unreliable as an information base for making decisions about the environmental and socioeconomic impacts of oil land leasing, development and production on the OCS..." Surely, if the information base underlying MMS leasing decisions is inadequate for California and Florida, the base is woefully inadequate for Alaska.

The paucity of scientific data in Alaska is clearly evident in MMS discussion of potential environmental impacts of OCS oil development: there is simply no scientific basis for many statements, other statements are poorly referenced. Recovery rates of marine species and ecological communities are seriously underestimated by MMS.

Not only are the true environmental and socioeconomic risks poorly understood, but the ability to respond to, contain and cleanup oil spills in arctic and subarctic waters is virtually nonexistent. Effective oil spill response options have not been demonstrated for these waters. In Norway, exploratory drilling for oil in ice-packed waters has been postponed by the government until successful cleanup technology has been demonstrated. The Oil Pollution Act of 1990 directed the Secretary of the Dept. of Interior to prepare an extensive report on offshore oil contingency planning in the Arctic. The final report has not been completed to date.

Finally, MMS logic in pressing for development of domestic oil reserves as "the nation's best defense against the economic distress of a future supply disruption" from the "volatile Middle East/Persian Gulf area" is distressing. It is clear that, since 67% of the global oil reserves are concentrated in the Middle East and only 4% in the U.S., hastening domestic production is a very short term solution to a long term problem. Our dependency on foreign oil is guaranteed so long as we are dependent on oil.

In conclusion, "environmentally sound development" of Alaskan OCS lands is currently impossible given the status of scientific and technical information on Alaskan marine ecosystems and oil spill cleanup capabilities. Questions regarding adequacy of information and capability of technology for prevention and response in arctic and subarctic conditions must be answered BEFORE leasing is approved. Further, the public should have the opportunity to review the report on oil spill contingency planning in the arctic, as provided by the Oil Pollution Act, and the report on local impacts for oil development and transport in the arctic being prepared by the Dept. of Interior PRIOR to any lease decisions being made in Alaskan waters.

Until these issues are satisfactorily addressed, we support the no action alternative: no leasing for the Arctic, Bering Sea, Gulf of Alaska, and Cook Inlet.

Thank you for the opportunity to comment.

Sincerely,

Dr. Riki Ott
President

Operations Center
October 28, 1991

BY FEDERAL EXPRESS

Environmental Projects Coordination Branch
(Mail Stop 4320)
Minerals Management Service
U.S. Department of Interior
381 Elden Street
Herndon, VA. 22070

re: OCS 1992-1997 Draft
Oil and Gas Resources
Proposed Program

Dear sirs:

We are writing to comment on the Draft Environmental Impact Statement (DEIS) and Comprehensive Program for the OCS National Gas and Oil Resource Management 1992-1997 Program. Project ReefKeeper strongly supports adoption of the lease block deletions proposed in Alternative VI (Exclude Designated Bathymetric Features) because it only those lease block deletions can guarantee protection of the sensitive Gulf of Mexico shelf-edge coral banks.

Project ReefKeeper is a national non-profit conservation organization dedicated exclusively to the protection of coral reefs and their marine life. Since 1985, we have been active and constant participants in the public comment process for OCS lease sales throughout the Gulf of Mexico and Straits of Florida.

We support adoption of the lease block deletions proposed in Alternative VI, without endorsing lease sales in sensitive marine habitats in geographical areas not addressed in Alternative VI. We further request that the Minerals Management Service (MMS) conduct a peer review and reconsider its present conclusion that the possible impacts to Gulf of Mexico shelf-edge coral banks from the preferred action proposed by MMS would be the same as the impacts from Alternative VI.

After careful review of all the documents related to the 1992-1997 OCS Program, we have concluded that Alternative VI does

Project ReefKeeper

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not have the same impact potential to coral banks as the proposed Alternative I action. Unless all of the biological and lease stipulations referenced under Alternative I are formally adopted as an integral component of Alternative I and specifically detailed as such, Alternative I has the potential for major biological devastation of fragile Gulf of Mexico coral bank communities.

Biological Stipulations Must Be Specified

As it is currently written, the proposed action assumes that prior lease stipulations will be imposed under Alternative I. However, nowhere in the Draft Proposal, the Draft Environmental Impact Statement, the Summary and Decision, or the Decision Documents are the topographic and biological stipulations specified or guaranteed to be applied to lease sales under Alternative I. In fact, the only way that these stipulations can be found by a reviewer is through piecemeal extraction from the analysis of environmental impacts to habitats.

In order to assure the protection needed to safeguard the Gulf coral banks and present the proposed action with proper legal clarity, the biological stipulations must be clearly presented as an integral component of Alternative I.

Benthic habitats in the Gulf of Mexico that are at most risk to potential impacts from oil and gas operations are those of the topographic features, the pinnacle trend live bottom, and low-relief live hardbottoms which dominate the Eastern Gulf.

Normal OCS oil and gas activities that could affect these seafloor habitats result from discharges and from disturbances of the bottom caused by platform emplacement, laying pipelines, platform removal, and anchoring.

Should the protection that would be afforded to Gulf coral bank resources by biological and topographical stipulations not be provided, adverse impacts to the biota of these ecologically valuable topographical features and seafloor habitats will be severe and long lasting. (DEIS OCS 5 year plan `92-`97; DEIS OCS lease sales 139/141, DEIS OCS lease sales 131/135/137; DEIS OCS lease sales 115/116.)

The currently proposed Alternative I action must be revised by adding language to guarantee adoption and enforcement of the stipulations on all lease sales encompassing any Gulf shelf-edge coral bank. It is totally unacceptable and unenforceable, as the present draft program proposes, to merely "assume the implementation of all mitigation measures and sale specific stipulations commonly adopted in past lease sales." A commitment to implementation must be made that specifically spells out the stipulations which will be made a part of the proposed action.

If procedurally the stipulations cannot be made a part of the proposed action under Alternative I, then they must be made a separate Alternative to be combined with the proposed action .

Live Bottom (Pinnacle Trend) Stipulation Language Request

The pinnacle trend of the Central Gulf is classified as a live bottom and could be impacted from physical damage of unrestricted oil and gas activities. The requested live bottom stipulation is intended to protect the pinnacle trend from damage and, at the same time, provide for recovery of oil and gas resources.

The pinnacle trend is patchy. The stipulation would operate to identify the individual pinnacles which may be present in affected lease blocks. The stipulation would require that a survey be done to encompass the potential area of proposed surface disturbance and that a bathymetry map be made from this survey.

The bathymetry map would depict any pinnacles in the vicinity of the proposed activity. The MMS Regional Director, through consultation with the Fish and Wildlife Service, could then decide if pinnacles in the trend would be potentially impacted and, if so, require appropriate mitigative measures.

By identifying the individual pinnacles present at an activity site, the lesse could be directed to avoid placement of the drilling rig and anchors on the sensitive areas. Thus, mechanical damage to the pinnacles would be eliminated by the imposition of the stipulation.

We insist that a Live Bottom (Pinnacle Trend) stipulation be placed in the Final Program Document as either a part of the proposed action or as a separate adopted alternative, with language taken from past lease sales as follows:

Live Bottom (Pinnacle Trend) Stipulation
(Central Gulf Planning Area)

For the purpose of this stipulation, "live bottom areas" are defined as seagrass communities; or those areas which contain biological assemblages consisting of such sessile invertebrates as sea fans, sea whips, hydroids, anemones, ascidians, sponges, bryozoans, or corals living upon and attached to naturally occuring hard or rocky formations with rough, broken, or smooth topography; or areas whose lithotope favors the accumulation of turtles, fishes, and other fauna.

Prior to any drilling activities or the construction or placement of any structure for exploration or development on lease blocks which might contain pinnacle trend live bottom areas, including, but not limited to, well drilling and pipeline and platform placement, the lessee will submit to the Regional Director (RD) a live bottom survey report containing a bathymetry map prepared utilizing remote sensing techniques. The bathymetry map shall be prepared for the purpose of determining the presence or absence of live bottoms which could be impacted by the proposed activity. This map shall encompass such an area of the seafloor where surface disturbing activities, including anchoring, may occur.

If it is determined that the live bottoms might be adversely impacted by the proposed activity, the RD will require the lessee to undertake any measure deemed economically, environmentally, and technically feasible to protect the pinnacle area. These measures may include, but are not limited to the following:

(a) the relocation of operations;and
(b) monitoring to assess the impact of the activity on the live bottoms.

Live Bottom (Low Relief) Stipulation Language Request

The low-relief live-bottom areas of the Eastern Gulf provide habitat for seagrass, corals, and coral community organisms. These communities would be adversely impacted by unrestricted oil and gas activities resulting from the proposed action if such activities took place on or near these communities.

Since live-bottom areas are poorly mapped and discontinuously distributed on the Eastern Gulf Florida shelf, this stipulation would require investigation for and the identification of live bottom areas in affected lease blocks of the Eastern Gulf.

Lessees would be required to conduct photodocumentation surveys within 1,000m of a proposed activity and prepare a live bottom survey report based on the data. The report would include a bathymetry map of the area and an interpretation for live bottoms within the area covering a minimum of 1,000m from the proposed activity site.

If live bottoms are identified within 1,000m of the proposed activity, the RD may then impose appropriate protective measures to insure their protection.

The live-bottom stipulation would serve to protect both the seagrass beds and the low-relief live-bottom communities from impacts related to offshore oil and gas activities. This biological stipulation would reduce the potential impact of this proposed action on these live bottom areas of the Eastern Gulf in water depths less than 100 m.

This would be accomplished by requiring the positive identification of live bottom areas prior to any drilling activity, allowing the RD to take effective action on a case-by-case basis to protect the identified live bottom area.

An analysis of the live bottom survey report by MMS, with consultation with FWS, would determine whether live-bottom areas requiring protection from potential harmful impacts due to oil and gas operations are present. If such areas are present, any of the following protective measures could be invoked:

(1) relocation of the operations far enough away from the live bottom to prevent the harmful impacts;
(2) if the relief of the live bottom is enough (i.e., greater than 10-15 m), shunting of all drilling effluents may be the method of choice;
(3) if relocation and shunting are not feasible and the area is considered to be of high sensitivity and ecological importance such that no potential degradation should be risked and yet the drilling itself can take place without risk, it may be determined that drilling effluents will have to be transported to a disposal site away from live bottom areas.

Absent this stipulation, live bottom areas could go undetected and may be seriously damaged by oil and gas exploration and development activities.

We insist that a Live Bottom (Low Relief) stipulation be placed in the Final Program Document as either a part of the proposed action or as a separate adopted alternative, with language taken from past lease sales as follows:

Live Bottom (Low Relief) Stipulation
(Eastern Gulf Planning Area)

For the pupose of this stipulation, "live bottom areas" are defined as seagrass communities; or those areas which contain biological assemblages consisting of such sessile invertebrates as sea fans, sea whips, hydroids, anemones, ascidians, sponges, bryozans, or corals living upon and attached to naturally occuring hard or rocky formations with rough, broken, or smooth topography; or areas whose lithotope favors the accumulation of turtles, fishes, and other fauna.

Prior to any drilling activities or the construction or replacement of any structure for exploration or development on lease blocks that may contain low relief live bottoms; including, but not limited to, well drilling and pipeline and platform placement, the lessee will submit to the (RD) a live bottom survey report containing a bathymetry map prepared utilizing remote sensing techniques and an interpretation of live bottom areas prepared from a photodocumentation survey. The live bottom survey report, including the attendant surveys, will encompass an

area within a minimum 1,000m distance of a proposed activity site.

If it is determined that live bottom areas might be adversely impacted by the proposed activity, then the RD will require the lessee to undertake any measure deemed economically, environmentally, and technically feasible to protect live bottom areas. These measures may include, but are not limited to, the following:

(a) The relocation of operations to avoid live bottom areas;
(b) the shunting of all drilling fluids and cuttings in such a manner as to avoid live bottom areas;
(c) the transportation of drilling fluids and cuttings to approved disposal sites; and
(d) the monitoring of live bottom areas to asses the adequacy of any mitigating measures taken and the impact of lease initiated activities.

Topographic Features (Coral Banks)
Stipulation Language Request

The topographic features of the Gulf of Mexico provide habitat for coral and coral community organisms. The habitat created by the topographical features is important in several respects: they support hard-bottom communities of high biomass, high diversity, and high numbers of plant and animal species; they support, either as shelter, food, or both, large numbers of commercially and recreationally important fishes; they are unique to the extent that they are small isolated areas of such communities in the vast, relatively monotonous Gulf of Mexico of much lower biomass and diversity; they (especially the East and West Flower Garden Banks and the Florida Middle Grounds) provide a relatively pristine area suitable for scientific research; and they have an aesthetically attractive intrinsic value.

These communities would be severely and adversely impacted by unrestricted oil and gas activities resulting from the proposed action if such activities took place on or near these communities.

This requested stipulation would not prevent the recovery of oil and gas resources, but it would serve to protect valuable and sensitive biological resources.

The stipulation would establish No Activity Zones at the topographic features. The zone is defined by the 85 m isobath because, generally, the biota shallower than 85 m are more typical of the Caribbean reef biota, while the biota deeper than 85 m are similar to soft bottom organisms found throughout the Gulf. Where a bank is in water depths less than 85 m, the deepest closing isobath defines the No Activity Zone for that bank.

Within the No Activity Zone, no operations, anchoring, or structures would be allowed.

Outside of the No Activity Zones, additional restrictive zones would be established within which oil and gas operations could occur but within which drilling discharges would be shunted. Shunting of the drilling effluent to a level deeper than the level of the living reef of a high relief topographic feature would protect the biota of high relief topographic features.

The Flower Garden Banks, because they contain the northernmost example in the Gulf of living coral reefs and are in the process of being designated as a National Marine Sanctuary, would be protected to a greater degree than the other banks. The added provisions of the stipulation at the Flower Gardens would be that:

(a) the "No Activity Zone" would be based on the 100 m isobath instead of the 85 m isobath and would be defined by the "1/4 1/4 1/4" system (a method of defining a specific portion of a block) rather than the actual isobath; and

(b) there would be a "4 Mile Zone" instead of a "1 Mile Zone" in which shunting would be required.

The purpose of the stipulation is to protect the biota of the topographic features from adverse effects due to routine oil and gas activities such as physical damage from anchoring and rig emplacement, and from potential toxic and smothering effects from muds and cuttings discharges.

Mechanical damage resulting from oil and gas operations is probably the single most severe impact to benthic areas. The "No Activity Zone" designation would completely eliminate this threat from leasing activities. The sensitive biota within the zones would thus be protected.

We insist that a Topographic Features (Coral Banks) Stipulation be placed in the Final Program Document as either a part of the proposed action or as a separate adopted alternative, with language taken from past lease sales as follows:

Topographic Features Stipulation
(Western, Central and Eastern Gulf Planning Areas)

The banks and corresponding lease blocks to which this stipulation would be applied in the Western Gulf are:

Shelf Edge Banks

Bank Name	Isobath (meters)
West Flower Garden Bank[1] (defined by 1/4 1/4 1/4 system)	100
East Flower Garden Bank[1] (defined by 1/4 1/4 1/4 system)	100
MacNeil Bank	82
29 Fathom Bank	64
Rankin Bank	85
Geyer Bank	85
Elvers Bank	85
Bright Bank[2]	85
McGrail Bank[2]	85
Rezak Bank[2]	85
Sidner Bank	85
Parker Bank	85
Stetson Bank	62
Applebaum Bank	85

Low Relief Banks[3]

Bank Name	Isobath (meters)
Mysterious Bank	74,76,78,80,84 (see leasing map)
Blackfish Ridge	70
Big Dunn Bar	65
Small Dunn Bar	65
32 Fathom Bank	52
Coffee Lump	Various (see leasing map)
Claypile Bank[4]	50

[1]

[2] Central Gulf of Mexico Bank with a portion of its "1 Mile Zone" and/or "3 Mile Zone" in the Western Gulf of Mexico.

[2] Central Gulf of Mexico Bank with a portion of its "1 Mile Zone" and/or "3 Mile Zone" in the Western Gulf of Mexico.

[2] Central Gulf of Mexico Bank with a portion of its "1 Mile Zone" and/or "3 Mile Zone" in the Western Gulf of Mexico.

[3] Low Relief Banks - Only paragraph (a) applies.

[4] Claypile Bank - Paragraphs (a) and (b) apply. In paragraph (b) monitoring of the effluent to determine the affect on the biota of Claypile Bank shall be required rather than shunting.

South Texas Banks[5]

Bank Name	Isobath (meters)
Dream Bank	78,82
Southern Bank	80
Hospital Bank	70
North Hospital Bank	68
Aransas Bank	70
South Baker Bank	70
Baker Bank	70

These are the banks that would cause this stipulation to be applied to blocks of the Central Gulf:

Bank Name	Isobath (meters)	Bank Name	Isobath (meters)
McGrail Bank	85	Parker Bank	85
Bouma Bank	85	Fishnet Bank	76
Rezak Bank	85	Jakkula Bank	85
Sidner Bank	85	Sweet Bank	85
Sonnier Bank	55	Rankin Bank	85
Sackett Bank	85	29 Fathom Bank	64
Ewing Bank	85	Bright Bank	85
Diaphus Bank	85	Geyer Bank	85
Alderdice Bank	80	MacNeil Bank	82

These are the banks that would cause this stipulation to be applied to lease blocks in the Eastern Gulf:

The 23 lease blocks centered around the Florida Middle Grounds and bounded north to south between latitude 29 and 28 degrees North, and bounded east to west between longitudes 84 and 85 degrees West.

The stipulation should read as follows:

(a) No activity including structures, drilling rigs, pipelines, or anchoring will be allowed within the listed isobath ("No Activity Zone") of the banks as listed above.

(b) Operations within the area shown as "1,000 Meter Zone" shall be restricted by shunting all drill cuttings and drilling fluids to the bottom through a downpipe that terminates an appropriate distance, but no more than ten meters, from the bottom.

[5] South Texas Banks - Only paragraphs (a) and (b) apply.

(c) Operations within the area shown as "1 Mile Zone" shall be restricted by shunting all drilling fluids to the bottom through a downpipe that terminates an appropriate distance, but no more than ten meters, from the bottom. (Where there is a "1 Mile Zone" designated, the 1,000 Meter Zone" in paragraph (b) is not designated.)

(d) Operations within the area shown as "3 Mile Zone" shall be restricted by shunting all drill cuttings and drilling fluids from development operations to the bottom through a downpipe that terminates an appropriate distance, but no more than ten meters, from the bottom.

No Activity Zones and Buffer Zones Must Be Specified

The biological stipulations and their language must be modified to include the distances that will be enforced in order to keep potentially harmful activities away from the live bottom and pinnacle areas. According to the DEIS for this 5 year plan:

> Impacts on hard bottom areas around production platforms could result in the community within a 100-yard radius being destroyed or severely altered. The impacts could come from crushing from the platform itself and drill discharges. Recovery could require several years after the platform is removed. (p. IV.A-14). A blowout within 100 m of a hard bottom community could result in the smothering of the biota within a very limited area of a hard bottom due to sedimentation. The bottom area disturbed in the emplacement of platforms is about 9 acres per platform. Pipeline placement causes considerably more disruption to the bottom sediments than platform placement because the source of the disturbance is not stationary and the area disturbed is much larger. Anchoring could result in scars (trenches and mounds) on the seafloor that could range from 160-1,800 feet in length and could last for two to five years in fine soft bottom sediments. Anchor cables could disturb bottom areas for 1,600 feet per anchor and create a 2 foot swath.

It is not sufficient to "limit the proximity of new activities in the hard bottom region" (p.IV.D-206). Distances must be specified. "Proximities" are not specific; they could be interpreted by the lessee to suit the lessee -- and therefore offer no assurance of protection.

It is equally insufficient to "severely limit oil and gas activities in the immediate vicinity of hardbottom communities" (p. IV.D-207).. What will these activities be severely limited to? This too must be specified.

This type of language must be clarified so as to avoid future misinterpretations regarding the given stipulations. As they are presented now, it is too easy for the MMS to agree to changes in the intent of these stipulations under pressure from potential or actual lessees.

The stipulations, as well as the 5-year plan's Proposed Action, must clearly and specifically detail the "No Activity Zones" and their specific boundaries which are not to be altered.

Buffer zones must also be detailed to encompass a 1-mile zone around any coral bank. This should be mandated for inclusion in the Topographic Features Stipulation.

Enviromental Impact Analyses Are Insufficient and Unacceptable

We are very concerned about the accuracy of the recovery rate analysis for corals throughout the Draft Proposal.

According to the FEIS for OCS lease sales 131, 135 and 137, drilling muds can affect corals in three ways: direct burial, increased turbidity and reduced photosynthesis (p. IV-268). Under conditions of prolonged direct exposure to discharges from offshore oil and gas activities, coral reef habitat appears to be particularly sensitive to drilling discharges and would likely suffer substantial impacts from these discharges (p. IV.A-31).

Without the biological stipulations, severity of impacts were anticipated in those lease sales to last from 5 to 10 years at the regional scale, and for periods longer than 10 years at the local scale.

Without any scientific backing or justification given, the current 5 Year Plan DEIS decreases that impact recovery rate from 5-10+ years (FEIS-OCS 135,p.IV-268) to just 2-8 weeks (1992-1997 document IV.D-207) based only on the assumption of biological and topographic stipulations, not on the definite inclusion of stipulations in the proposed action.

This is unacceptable.

According to the DEIS for OCS lease sales 131, 135, 137:

(1) Nothing except deletion will protect a shelf-edge bank and its coral community from the adverse effects of a large blowout on an oil or gas platform. (page II-16 and 40)

(2) Large amounts of sediment resuspended by a nearby blowout could smother coral communities, causing widespread mortality. Recolonization would be slow, if at all. (Page IV-152 and 257)

(3) A blowout ocurring directly on top of a bank would destroy not only the living coral community, but the physical

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bank itself, making recolonization impossible. (Page IV-152 and 257)

(4) Nothing but deletion will protect a shelf-edge bank's biological community from the severe and long-lasting deleterious impacts that would result from contact with oil from a subsurface pipeline break or blowout oil spill. (page IV-152 and 257)

These findings must be reflected and addressed in the 1992-1997 Final OCS Program.

Coral Habitats Discounted

The Draft Comprehensive Program Summary and Decision Document makes no mention of coral reefs or coral habitats. The environmental and Predictive Information regarding Shoreline and Seafloor Habitats (p.28) fails to mention coral, hardbottom or live bottom as a seafloor habitat with the potential for impact. This must be corrected in the Final OCS 5 Year Program Document.

These coral reefs and habitats and their environmental sensitivity have been grossly discounted throughout all 1992-1997 Draft Proposal Documents, especially in the Decision Document. That document admits MMS downplaying of coral habitats. It states that coral habitats "do not occupy sufficient area to affect environmental sensitivity ratings" for the Eastern Gulf (DDP 7/91, p. 10-c.11).

This preciously rare ecosystem is being discounted BECAUSE it IS preciously rare. That is totally unacceptable.

Coral habitat coverage relative to the overall area of the Gulf Region is not as important as the degree of fragility of the Gulf coral banks. They must be afforded the protection they need. Coral banks and their biological communities must be assessed as a separate habitat region for the purpose of environmental impact analyses. Otherwise, the limited area coverage of coral habitats puts them at an unfair disadvantage by having their environmental sensitity diluted through inclusion in the vastly larger and poorer mud/sand habitats of the overall Gulf Region.

Gulf of Mexico shelf-edge bank coral communities have taken thousands of years to develop into fragile and irreplaceable ecological treasures. They are already under tremendous environmental stress because they are located at the extreme limit of their natural range.

Coral grows by only millimeters per year. Even a small patch takes hundreds of years to develop. There is nothing man can do to speed up this process or mitigate the loss of coral habitat.

These scientific facts should be reason enough to justify the coral habitats of the Gulf region as sensitive enough to deserve separate sensitivity rating consideration.

Conclusion

Based only on assumptions, anticipations and expectations of stipulation implementation, all of the impact analyses for the preferred action are pure and unwarranted speculation. Nothing is conclusive if based solely on assumption.

The only way for the proposed action to work and to act in accordance with Section 18 (a)(3) of the OCS Lands Act, to "obtain a proper balance between the potential for environmental damage and the potential for discovery of oil and gas" with regards to Gulf of Mexico coral habitats and other live bottoms, is for MMS to commit to the proposed stipulations, making them a definite part of the proposed action and ensuring their implementation.

In order to safeguard the Gulf of Mexico coral banks and other live bottoms adequately, we request either adoption of the proposed lease block deletions in Alternative VI or specific inclusion of biological and topographic stipulations, as detailed above, in the proposed Alternative I action.

Thank you for your consideration in this matter.

Sincerely,

Robin Lamberta

ROBIN LAMBERTA
Conservation Associate

Alexander Stone

ALEXANDER STONE
Director

AS/RL: ml
cc:Coral Reef Coalition members
ReefKeeper Network members
OCS Coalition members

OCS/MMS COMPREHENSIVE PROGRAM

1992-1997

DRAFT ENVIRONMENTAL IMPACT STATEMENT

ALASKA REGION ON/OFFSHORE LAND/LEASE SALES

OCTOBER 26, 1991

Prepared for the Public Awareness Committee For The Environment (PACE)

by Patricia Garoutte & Suzann Winder

OPENING STATEMENT

The Public Awareness Committee For The Environment (PACE) in Kenai, Alaska on behalf of our eighty two members, respectfully submits the following comments on the proposed OCS/MMS 5 Year Oil/Gas Land/Lease Sale Draft Environmental Impact Statement (DEIS).

PACE is opposed to any and all gas and oil exploration covered in the Outer Continental Shelf Natural Gas and Oil Resource Management Comprehensive Program 1992-1997, therefore, we support Alternative II, the No Action Plan. We support conservation and the alternative energy sources of solar, thermal and wind power and conclude that they are the only safe and sane means of providing long term infinite energy.

ALASKA REGION

Our comments and concerns address the Alaska Region only, but they express our grave concerns for the rest of the OCS of the United States as well. These comments are limited to Alaska because we were only able to assimilate that portion of this eight inch, two volume DEIS!

PACE is concerned because this document does not take into consideration the magnitude of the size of Alaska and the variances of climatic regions involved in this OCS land/lease sale. To treat the state of Alaska as a monolithic homogenous environment is to disregard its geographic location in the world and its extreme climatological variances which range from temperate to Arctic.

For example - the St. George Basin is at 52 degrees latitude while the Chuckchi Sea lies near 75 degrees. The Yakutat Terrain is at 55 degrees while the Beaufort Sea is above 65. If the map of Alaska is overlain on a map of the contiguous United States, Alaska stretches from the Northern border of Maine to the westward reaches of the mid Pacific Ocean, and like the contiguous United States, Alaska also experiences major climatic differences in temperature and weather.

VIABILITY OF DEIS AS A DOCUMENT

The physical layout of this DEIS lacks continuity. Rather than discussing the environmental impacts from oil and gas exploration, extraction and production on each region of Alaska in separate dialogue, it discusses issues like geology, marine environments, meterology, socio-economics and port facilities with only scattered references to each of Alaska's bioregions. This tends to make the contents of this document dysjunct and difficult to follow.

PACE respectfully requests that the final MMS Environmental Impact Assessments (EIA) and the Environmental Impact Statements (EIS) be rearranged regionally so that environmental impacts to each of Alaska's bioregions are discussed and referenced separately. This will assist all who read the final documents to have a better and more

comprehensive understanding of the environmental and socio/economic impacts oil and gas exploration, extraction and production on their particular bioregion.

PACE is very concerned about the many hyperbolic statements that are a part of this DEIS. An example of what we are referring to is found on page III-88, first paragraph: "...Truck roads serving the Kenai Peninsula are two lanes with improved shoulders except Turnigan Arm of the Cook Inlet, where the road has been widened to four lanes."

This is a very blatant misrepresentation of the truth, to say the least! Those of us who live on the Kenai Peninsula and drive this road all the time know that there is no four lane road around Turnigan Arm nor a "truck road...with improved shoulders" all the way to Kenai. What a myth! We challenge you to drive this stretch of highway - especially in the wintertime - to learn what its really like.

It is this type of blatant misrepresentation that leads PACE to question the authenticity of many statements throughout this Draft Environmental Impact Statement (DEIS). We are concerned about the overall lack of substantive documentation and the validity of many of the conclusions found in this DEIS.

While there are many references cited most are unavailable for peer review and there is a general overall lack of scientific supported documentation to backup MMS' conclusive statements about the socio/economic and environmental impacts from oil and gas exploration, extraction and production.

There is an overall lack on the part of MMS to use the most current federal and state agency biological studies and environmental data. This information *is* available from agencies like NOAA and its National Marine Fisheries Service, the U. S. Fish and Wildlife Service and the Alaska Department of Fish and Game.

Much data is currently becoming available about the effects from the Exxon Valdez oil spill in Prince William Sound. All pertinent available data should be extensively pursued by MMS for inclusion in its final EIA and EIS.

The availability of this up to date information makes PACE question the validity of the MMS statement that "the information base currently available is adequate for environmental assessment and for the Secretary of the Interior to make a decision concerning this lease sales". By MMS' own statement on Page III-52 of this DEIS..."No baseline data are available for various synthetic organic compounds (i.e., pesticides, herbicides, chemical additives, etc.) that are toxic to biotic communities. Existing concentrations, however, are believed to be low or absent because of the absence of major point and nonpoint sources."

How can MMS claim the information base is "adequate" to complete an environmental assessment for potential damages to marine biosystems when there is no baseline data available to ascertain the short and long term affects of petro/chemical toxins and heavy metals on marine environments? How can this agency claim to have completed the required environmental assessments on "belief" alone?

The wisdom of this reasoning is beyond our understanding!

REGIONAL CONCERNS

THE NORTON, NAVARIN, ST. GEORGE, N. ALEUTIAN, ST. MATTHEW-HALL BASINS AND THE YAKUTAT TERRAIN

PACE wonders why the Norton, Navarin & St. George Basins are being considered as potential oil/gas lease sale sites when, according to this DEIS document, all twenty four exploratory wells drilled in these areas have been plugged and abandoned as apparent dry holes. This same question applies to the Yakutat Terrain where twelve exploratory wells were drilled and all have been plugged and abandoned as dry holes. According to this DEIS, this pattern of exploratory well drilling and abandonment is relatively consistent throughout the other proposed regions of Alaska. [2]

PACE recently learned that drilling one ten thousand foot gas well produces four to six thousand cubic yards of drilling sands and muds. (This is consistent with the information contained on page IV.A-2 of this DEIS.) PACE extrapolated this information and came up with the following figures for the amount of drilling muds that were dumped into the once pristine waters of Norton Basin, the Navarin Basin, the St. George Basin and the Yakutat Terrain Regions of Alaska:

LOCATION	# DRY WELLS DRILLED	CUBIC YARDS OF TOXIC DRILLING MUDS
Yakutat	12	48,000 to 72,000
Norton Basin	6	24,000 to 36,000
Navarin Basin	8	32,000 to 48,000
St. George Basin	10	40,000 to 60,000
Total	36	144,000 to 216,000

Our visual inspection of these well drilling byproducts proved very little, yet a chemical analysis of drilling muds show they are a complex chemical "stew" of 500 different chemicals, including asbestos, formaldehyde, caustic soda and heavy metals like barium, arsenic, aluminum, mercury, and zinc. [3]

PACE has some major concerns about the environmental impacts the disposal of all of these RCRA exempted drilling muds have on Alaska's very biologically sensitive and biologically diverse waters. We are most especially concerned about the bio-accumulation of heavy metals and petroleum hydrocarbons at the very base of the food chain and the affects this bio-accumulation has on the rich abundance of phytoplankton and zooplankton in Alaskan coastal waters.

These concerns are supported by a 1979 NOAA report that states: "Petroleum hydrocarbons and heavy metals could accumulate in some sediments, leading to long-term exposure to benthic organisms, several of which are either key members of food webs or of commercial importance." NOAA further states that "Petroleum hydrocarbons and heavy metals can be accumulated...within the body tissue of most fish and invertebrates. This type of contamination may seriously disrupt food webs, change the population dynamics of many organisms, and enter human food supplies." [4]

CRAB FISHERY

Robert Otto, of the National Marine Fisheries Service in Kodiak, Alaska researched the Eastern Bering Sea crab fisheries in 1979/80 and just completed a new review of the same fisheries on September 30, 1991. Comparative data for the red king crab (*Paralithodes camtschatica*), the blue king crab (*P. platypus*) and the Tanner crabs (*Chionoecetes bairdi* and *C. opilio*) are listed below:

Annual abundance estimates (millions of crab- male and female) in Eastern Bering Sea - NOAA National Marine Fisheries Service surveys.

Yr.	R. King	B. King	Tanner (*C. bairdi*)	Tanner (*C. op.*)
1975	267.3	28.4	No stats avail.	No stats. avail.
1977	365.3	34.5	1007.6	No stats. avail.
1979	285.2	32.6	377.0	No stats. avail.
1981	189.9	32.3	745.1	No stats. avail
1983	89.2	21.8	410.5	3759.7
1985	39.9	3.2	84.7	1004.3
1987	75.7	5.6	486.8	10438.4
1989	51.1	17.6	949.9	9546.5
1990	52.2	12.5	782.5	7542.1

These figures clearly show the "chain reaction" that prevails in any fishery. As the population of one fishery declines pressure is put on the other fishery. The historical trend has been toward major decreases in marketable male species, except for *C. Opiolo*. Now that the fishery is concentrating more on *C. Opiolo*, and with the tighter fishing controls over the King Crab fisheries, the other three species of marketable males is beginning an incremental increase. [5]

PACE wonders how much this decline is due to over fishing and how much is due to destruction of habitat? There is no way of knowing because there are no baseline benthic community habitat studies completed for this region of Alaska. We contend that an independent study should be completed before oil and gas exploration is even considered.

The Eastern Bering Sea Islands had and currently have strategic military bases. We have received reports that military toxins and equipment were dumped into these waters during and after WWII. Military shells and viles of unknown compounds have washed ashore in areas like Unalaska. One must wonder about the bioaccumulation of these toxins on all shellfish, including these species of crab. [6]

CETACEANS

ALL of Alaska's coastal waters are either home to or are visited annually by one or more threatened and endangered species which include:

1) The great Blue whale, the largest creature that ever lived and the 2) Fin whale which is second only in size to the Blue whale; 3) the Northern Right whale, the most endangered whale and its cousin the 4) Bowhead whale. The 5) Grey whale is primarily found in the Yakutat terrain, but has been seen in Southern Cook Inlet and in the Gulf of Alaska just outside Resurrection Bay; the singing 6) Humpback whale and the 7) Sperm whale. [7]

The diets of these whales vary, but all of these species (except the toothed Sperm whale) are filter feeders. Sperm whales eat mostly squid and fish while Grey whales scour the bottom benthic communities for crustaceans and other food sources. Each of the remaining threatened and endangered baleen whales feed themselves by filtering hundreds of tons of microscopic phytoplankton and zooplankton through their baleen plates daily. [8]

If these waters are fouled with petrochemical drilling muds, toxic chemicals, oil and processed waters these life giving phytoplankton and zooplankton will probably die. When these microscopic organisms die the lack of these primary food sources will adversely impact all threatened and endangered species and they too will die.

According to NOAA scientists "environmental disturbance could occur from the release of hydrocarbons and related contaminants from drilling platforms. Benthic communities could be destroyed by the increase in suspended particles (turbidity) caused by the disposal of drill cuttings and drilling muds." [9]

These benthic communities contain several "*key members*" of the food chain and without their presence in the oceans many species who rely on these primary producers will die. As these deaths occur up the food chain *all* species that rely on the oceans for survival will ultimately be adversely impacted - including man.

PINNIPEDS

In August 1990 Alaska Department of Fish and Game (ADF&G) reported that Eastern Aleutian Steller Sea Lion populations had decreased 94% from about 50,000 in the late 1960s to a population of about 3,000 in 1989. "The once plentiful Steller sea lion is now listed as a threatened species under the U.S. Endangered Species Act. Indications are that the population has declined by over 60 percent in just four years". [10]

ADF&G further states that "If Alaska's sea lion population is to recover it is critical that important habitats are protected from disturbance and destruction. Most sea lion haulouts and rookeries

are included in the Alaska Maritime National Wildlife Refuge and therefore *should be adequately protected*" [emphasis added]. ADF&G's assumption that the Alaska Maritime refuge system will somehow protect these threatened species is quite naive since these refuges are a primary target for oil/gas exploration, extraction and production. [11]

According to this ADF&G document Steller sea lions are found throughout the Yakutat Terrain, the Gulf of Alaska, Prince William Sound, Kodiak/Cook Inlet, North Aleutian, St. George, Bowers, Aleutian, Navarin, St. Matthew-Hall, Norton and Hope Basins. [12]

Political Scientist James P. Lester says that... "NEPA *mandates* that all federal agencies *must* identify any programs or determinations significantly affecting the environment, define the adverse environmental consequences of such action through the *development and use of relevant, interdisciplinary scientific analysis*, and then *use the impact assessment as distinct and significant criteria for policy evaluations*"[emphasis added]. [13]

Lester further states that Section 102 of NEPA "...*mandates* the *quality* of scientific data as well as the *method* of its utilization in administrative policy-making...."[emphasis added]. [14]

PACE finds very little evidence that this DEIS contains substantiated "*relevant, interdisciplinary, scientific analysis*" or data about the short and long term impacts of oil and gas exploration, extraction and production on the above endangered species.

GULF OF ALASKA AND COOK INLET PLANNING AREAS

PINNIPEDS

According to ADF&G, Marmot Island is "One of the largest sea lion rookeries in Alaska." Marmot Island is part of the Barren Island's Coastal Marine Sanctuary located at the Kennedy Entrance to lower Cook Inlet. ADF&G stresses that..."there is urgent need to protect the Marmot Island rookery by designating it as a critical wildlife habitat" and they urge that use of state waters surrounding major rookeries be regulated. [15]

There appear to be a variety of possible causes [for the population decline]..." *including environmental changes*, subsistence and commercial harvest, increases in natural predators, diseases, *toxic substances*....Food availability is one factor that may limit pinniped populations and there are indications that sea lions in Alaska have been nutritionally stressed." [16]

Steller seal lions are not the only Pinnipeds stressed in this region. According to Kathy Frost, a marine biologist with ADF&G's northern office, Harbor Seals have shown a major decline in populations at Tugidek Island, which is South of Kodiak. Counts in 1970 placed this population at 10,000-12,000 but by 1990/91 these populations had plummeted to 1000-2000. Prince William Sound had a 40% decrease in Harbor Seal populations from 1984-1988 with a continuing decrease in their populations after the March, 1989 Exxon Valdez tragedy. Harbor Seals are also declining in the Alaska Peninsula in the Pt. Heiden area. [17]

Ms. Frost reported that ADF&G did an informal count of Cook Inlet Beluga whale populations and came up with 300-500 and there may be as many as 1000. These numbers coincide with this DEIS but because there is no baseline data they do not know if their populations are increasing or decreasing. [18]

SALMON FISHERY

Preliminary reports received by PACE from ADF&G show that the total number of salmon taken by the commercial fishery in upper Cook Inlet is on the decline and has been since 1989, while the same fishery over the same period of time in lower Cook Inlet has been increasing. The increase in total fish taken in lower Cook Inlet has *not* increased the total pounds of fish for that region over the same period of time. [19]

PACE hypothesizes that salmon (which have very sensitive chemoreceptive abilities) are avoiding coming into Upper Cook Inlet because of the contamination from the Kenai Peninsula petro/chemical industries. We also believe that the chronic pollution from these industrial activities may be killing microorganisms that juvenile fish feed on when leaving Cook Inlet bioregion lakes and streams.

This highlights another major flaw in this DEIS.

KENAI NATIONAL WILDLIFE REFUGE AND THE KENAI RIVER

There is very little information found in this DEIS about the oil and gas exploration, extraction and production on the Kenai Peninsula and in Cook Inlet. In fact, there is no information at all about the Kenai National Wildlife Refuge nor the Kenai River. We are quite disturbed by MMS' conspicuous disregard of the environmental degradation caused by this industry to both of these national treasures.

The 1.97 million acre Kenai National Wildlife Refuge is renowned for its Kenai moose, grey wolves, bear, lynx, migratory birds, waterfowl and world record Kenai River salmon runs. It is also home to 45 oil wells, numerous roads (some of which were oiled with PCB contaminated oil by ARCO), a gas pipeline and a natural gas complex. [20]

Seventy six percent (471,000 acres) of the non-wilderness land of the Kenai Refuge is currently subject to oil and gas leasing and when flying over this refuge one is instantly aware of the very visible seismic lines criss-crossing each other all the way to Homer. At night burning gas flames from the various wells illuminates the refuge making it look more like a huge industrial complex than a wildlife refuge. [21]

The *major* disturbance to this refuge, however, is invisible to the naked eye but far more damaging.

COOK INLET

The ongoing discharge of incidious toxins from the oil and gas industry is culminating in a combination of chemicals and heavy metals that chemist Carl Reller has called a "witches brew".

> "Not only do we not know just how much pollution is being released on the Kenai Peninsula, we have no accurate picture of how this witches' brew of chemicals is affecting the environment or human health". [22]

In 1979 the U.S. Fish and Wildlife Service measured the accumulation of petrochemcial toxins in Kenai River Dolly Varden trout and Coho salmon. This report shows that sampled fish tissue contained high levels of zinc, lead, mercury, pthalates, benzenes and other petrochemical carbon compounds that have their origins in the petrochemical processing of oil and gas products. The USFWS completed a 1990 study but those statistics are currently unavailable. [23]

Over 10 million pounds of petro/chemical toxins are dumped into Cook Inlet each year and the ongoing damage to this marine environment must be substantial, yet no one has been interested enough to do a study on the effects from this chronic long term dumping on the Cook Inlet bio-communities for over twenty years! It is this very gross lack of knowledge itself that makes PACE oppose any further oil and gas exploration in the Alaska Region. [24]

(Rather than rewrite our total Cook Inlet testimony on the proposed OCS/MMS Oil and Gas Cook Inlet, Alaska Sale 149, we refer you to the attached appendum prepared by PACE for Cook Inlet Land/Lease Sale 149 on October 23, 1991. The information contained in that report is to be included in this portion of comments of this testimony.)

EXXON VALDEZ OIL SPILL

We *know* there are major environmental consequences from the Exxon Valdez oil spill in Prince William Sound, yet this DEIS makes very little reference to this catastrophic disaster. It is absurd that a Draft Environmental Impact Statement for development of oil and gas in Alaska did not focus on the tragic environmental and socio/economic damages caused from the largest oil spill to ever occur in U.S. waters.

The Exxon Valdez crude oil did not stay in the waters of Prince William Sound but rather oiled thousands of miles of beaches throughout our state.

One such "oiled" village was Port Graham, on the shores of lower Cook Inlet. Village Chief Meganeck of Port Graham, Alaska made the following comments about this tragedy to the commons:

> *"Never in the millenium of our tradition have we thought it possible for the water to die. But it is true - what we see now is death. Death again. Death not of each other but of the source of life, the water.*

> *He will need much help, much listening in order to live through the long barren season of dead water, a longer winter than before.*
>
> *We have never lived through this kind of death, but we have lived through lots of other kinds of death. We will learn from the past, we will learn from each other and we will live."*

GEOLOGIC DISASTERS

This DEIS contains some discussion about the possibilities of major geologic hazards for this area of Alaska

The Gulf of Alaska and Cook Inlet regions are all included in what volcanists call "the ring of fire". Page III-48 of this DEIS discusses the hazards associated with volcanism. Volcanism will create ..."lava flows...mud slides, pyroclastic bombs, floods, ash deposits, noxious fumes, poisonous gases, lightening strikes, earthquake swarms, radio interference and acid rain....Sediment erosion and deposition pose hazards to bottom founded structures by modification of sea floor topography, loading due to burial and the undermining of structural supports."

It isn't only volcanic earthquakes that cause the seafloor to sink. Man produced earthquakes can also modify "sea floor topography".

According to an article in the March, 1990 Discover magazine a Phillips Petroleum oil and gas processing complex in the North Sea sunk 12 feet in nineteen years. The article states that ..."Around many oil fields the Earth signals its displeasure by rumbling with low level quakes. These tremors rarely exceed 4 on the Richter scale, but they can still buckle pipelines and sheer off wells." [25]

Paul Segall of the U.S. Geological Survey (USGS) says that..."pumping water into drill holes near shallow fault lines increases the frequency of small earthquakes". He contends that ..."its not the rock that once held the oil that is set quaking by the extraction but the rock immediately surrounding it. As the oil is sucked out the porous rock in the reservoir contracts like a drying sponge. That contraction pulls on the less porous surrounding rock adding stress that increases the liklihood it will spring loose along existing faults. Contraction in the reservoir rock can also pull down the rock lying above, causing the surface to sink". [26]

The huge 1964 Alaskan earthquake occurred within this "ring of fire". It is common knowledge that there are hundreds of earthquakes each year in this region and according to this DEIS the "Alaskan-Aleutian arc-trench system....is a likely site for a great earthquake (Ms 7.8) sometime during the next few decades because of the continuing subduction of the Pacific lithospheric plate beneath the North American plate." [27]

Disasters such as..."regional tectonic uplift or subsidence, ground shaking, fault displacement, surface tilt, ground failure, and tsunami inundations" are most likely to occur. The recent violent eruptions of Mt. Augustine and Mt. Redoubt discussed in PACE's Land Lease Sale 149 addendum are perfect examples of the hazards associated with volcanism. [28]

This doesn't sound like a very safe place to construct offshore platforms and pipelines to us!

HOPE BASIN, CHUCKCHI AND BEAUFORT SEAS

The Hope Basin, Chuckchi and Beaufort Seas were spared the Exxon Valdez death of Chief Meganeck's village and they must *never* be put in such peril.

All the concerns expressed in the preceding pages apply to these very sensitive regions of Alaska as well. PACE is concerned about the proposed expansive pipeline development for this region and the potential devastating effects the movement of sea ice will have on this massive pipeline system, the offshore platforms and all the support systems that must be a part of this major undertaking.

According to W.F. Weeks and G. Weller ice gouges of 3-8 meters are common occurences. These gouges in the seafloor are the result of keels of drifting ice packs. [29]

This is substantiated by a statement on page III-48 of this DEIS to the effect that ..."Bergs or ice islands pose a potential threat to bottom-founded or sea floor structures, such as drill ship anchors, well heads, and pipelines." The unpredictability and technical infeasibility of burying pipelines in the subsea floor of Arctic waters can only exacerbate the potential for a major environmental disaster, not unlike the one we have just recently experienced in Prince William Sound.

As the Exxon Valdez tragedy proves there is no safe way to transport oil on these seas. This DEIS points out that there is a 96% chance of a major oil spill. This it totally unacceptable!

Sea ice restricts transportation along the Arctic coastline from mid July to mid September. What will happen if a catastrophic spill occurs during the months of October through June? Industry itself admits they do not have the technology to clean up oil in conditions of sea ice which prevail in the Arctic seas for much of the year. What is going to happen to this oil and what are the impacts on the threatened and endangered species who live in this water during that time of year?

Climatological conditions in this region of Alaska are some of the most severe in the world. Temperatures exceed -55 degrees F winds up to 90 kilometers per hour are not uncommon. Leads opened up during the very short summer months are extensively used by large numbers of resident and migratory species, such as the endangered Northern Right and Bowhead Whales. [30]

CETACEANS

The very endangered Bowhead and Northern Right whales are confined to the Arctic where they follow the seasonal advance and retreat of the ice in the Bering, Chuckchi and Beaufort Seas. These leads are used as calving grounds for both species and because leads are constantly moving they act to direct and concentrate cetaceans near shorelines. This inhibits their ability to move away from contamined areas which makes them particulary vulnerable to oil spills. [31]

The Northern Right whale is the most endangered whale on earth with current populations estimated to be only 1000. Both of these very endangered species feed on small planktonic crustaceans as they plough through the upper layer of these rich waters. They have the longest baleen of all the filter feeding whales and because they feed at the waters surface they are extremely vulnerable to oil fouled waters. Oil floats on top of water and these whales simply would not survive an oil spill of any size. Darkness and the widespread ice cover of these seas would make it virtually impossible for these species to detect and avoid oil spills. [32]

WALRUS

According to page III-64 & 65 of this DEIS walrus also use these Northern seas as a "nursery" and feeding grounds during the summer months. Because they use the ice floes as "haul-outs" this makes them particularly vulnerable to any oil spills that might occur. Because the females migrate North with their pups and leave the males behind a major oil spill could substantially decrease the number of breeding females, which could have devastating long term impacts on the overall population of this species.

ICE SEALS

According to ADF&G Marine Biologist Kathy Frost, there are no baseline data available for "Ice Seals" - which are the ringed seals, spotted seals, bearded seals and the ribbon seals. Studies done on Ringed seals in 1985-1987 showed their populations as stable *at that time*. No studies have been completed since then on this species. [33]

Ms. Frost stated there were limited studies completed in the late 1970s on Ribbon seals and Spotted seals but none have been completed since that time on these two species either. She expressed concern for the populations of Spotted seals because they eat the same marine fishes of pollock, kapelin and herring that the threatened Steller Sea Lions eat. Baseline studies on bearded seals are non-existent. [34]

PACE can only wonder where in the world MMS came up with their

---

estimated populations of these seals in the Bering-Chuckchi-Beaufort Seas? Page III-64 states that these populations occur for these species:

Spotted Seals	250,000
Ribbon Seals	110,000
Bearded Seals	300,000
Ringed Seals	1,500,000

There are no references to substantiate these figures, yet they are presented as fact!

This is yet another prime example of what PACE calls unsubstantiated hyperbole.

CONCLUDING REMARKS

PACE contends the required substantive "relevant, interdisciplinary, scientific analysis" that is required by the National Environmental Policy Act (NEPA) for completion of Environmental Impact Assessments and Statements is completely lacking in this DEIS.

We live within a closed system, governed by the laws of thermodynamics, yet we pursue, extract and use our finite resources as if they were infinite.

Given the alternatives we face of the ever increasing destruction of our environment from the burning of fossil fuels, PACE requests that the U.S. Government abandon this OCS/MMS oil and gas land/lease sale and use money instead on research and development of the renewable energy resources of solar, thermal and wind power.

PACE reiterates that we are opposed to the OCS/MMS sale and that we support Alternative II the No Action proposal.

We appreciate your consideration of, and action on, these comments.

Patricia Garoutte

Patricia Garoutte, President

Suzann Winder, Preparer of Report

Sunrise, Mt. McKinley Ansel Adams

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October 29, 1991

By Facsimile and
by Express Mail[1]

S. Scott Sewell, Director
Minerals Management Service
1849 C Street, NW
Washington, D.C. 20240

Re: Comments of National Parks and Conservation Association and Greenpeace USA Inc. re: OCS Comprehensive Program Proposal and EIS

Dear Mr. Sewell:

These comments on the OCS Comprehensive Program Proposal and Environmental Impact Statement ("EIS") are submitted on behalf of the National Parks and Conservation Association and Greenpeace USA, Inc. These comments supplement other comments submitted on behalf of these organizations, and incorporate by reference the comments of the Natural Resources Defense Council dated October 28, 1991.

Introduction

Because the documents prepared in support of the proposed program do not comply with the requirements of the Outer Continental Shelf Lands Act ("OCSLA"), the National Environmental Policy Act ("NEPA"), the Endangered Species Act ("ESA"), the Marine Mammal Protection Act ("MMPA") and other applicable law, and because the proposed program is unsound as a matter of public policy, we urge you to exclude leasing and/or exploration in the OCS, including the Alaskan OCS, for the five-year period 1992-1997. The legal deficiencies of the documents prepared to support the proposed five-year plan are described below. A decision to pursue any action other than the suggested action is legally insupportable without substantial revision of these documents, and further opportunity for public review and comment. General and page-specific comments follow.

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[1] The exhibits to these comments are submitted with the hardcopy.

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I. The Proposed Program is not a "schedule"

OCSLA requires the Secretary to adopt a "schedule" of OCS leasing. The Proposed Program does not do that, but instead suggests approximate years for leasing, noting that "[a]ctual dates depend upon the outcome of the Area Evaluation and Decision Process described in text." Summary and Decision, at page vii, footnote. This is a violation of OCSLA, and on this basis alone the Proposed Program is unlawful.

II. Failure to address inter-regional cumulative impacts

In ignorance of the mandate of NRDC v. Hodel, 865 F.2d 288 (D.C. Cir. 1988) and City of Tenakee Springs v. Clough, 915 F.2d 1308 (9th Cir. 1990), the Secretarial Issue Document ("SID") and EIS fail to adequately assess the cumulative impact of oil and gas exploration and development under the proposed program or any of the analyzed alternatives. These documents ignore potential cumulative effects of oil and gas development occurring between and outside OCS planning areas and regions. Instead, analysis of cumulative impact is limited to those impacts observed within the respective OCS planning areas. This approach ignores potential inter-planning area effects and inter-regional effects, and is plainly insufficient under the cited legal authority. The EIS admits that oil and gas exploration and development will have effects on animal species which range and/or migrate between planning areas and between regions. Further, the oil trade literally spans the globe, since Alaska crude oil now is shipped to Hawaii, the West Coast of the United States, through the Panama Canal to Gulf Coast states and the Virgin Islands, and the Atlantic Coast. Thus, exploration and development is likely to have direct and indirect effects outside the Planning Areas. By limiting analysis of cumulative impact to specific planning areas, the SID and EIS miss completely those effects.

III. The environmental effects of the proposed action are understated

It is significant that the proposed five year plan and draft EIS comes on the heels of President Bush's pronounced "National Energy Strategy." Rather than the reasoned, balanced approach that NEPA and OCSLA demand in these type of documents, the SID and draft EIS smack of post-hoc rationalization of a policy chosen for reasons that ignore environmental impacts. One example of inadequate discussion demonstrates this point: the SID and draft EIS gloss over and understate the risks of oil spills which are projected to result from the Proposed Action, as compared with the No Action alternative.

The Proposed Alternative is presented as an alternative with a net social value of $7.3 billion, income to the Nation that will not be realized if the No Action alternative is adopted. Summary, at 45. Yet that conclusion is based in part on a very large, and inappropriate assumption: that the costs of oil spills under the Proposed Action will be less than under the No Action alternative because more spills are projected to occur in the Gulf of Mexico under the No Action alternative. See, e.g. Draft EIS at II-30.

This approach ignores the reality that oil production from Alaska under the Proposed Alternative is projected to be delivered by tanker rather than by pipeline, negating the differences between the Proposed and the No Action alternative. In fact, the EIS does acknowledge that oil spills are projected to take place in Alaska and the Pacific, without analyzing the comparative costs of moving the location of those projected spills from the Gulf of Mexico to other regions of the country. E.g. Draft EIS at IV.D-12 to IV.D-15. In particular, the decisionmaker has insufficient information to decide whether the estimated risks of oil spills under the No Action alternative really are, as concluded in the draft EIS, higher in the Gulf of Mexico than off the coast of the Western U.S. Cf. Draft EIS, III-34 to III-35, Tables III.A.3-1 and -2 (describing vessel traffic on West Coast) with id. III-153, Table III.C.3-2 (describing vessel traffic in Gulf of Mexico). Indeed, from examination of these data it appears the EIS has misrepresented the comparative effects of risks of spills based on vessel traffic, since the vessel traffic along the Western United States appears far in excess of that in the Gulf of Mexico.

Moreover, the SID and draft EIS completely ignore the risks of spills associated with tanker traffic routes to Hawaii and through the Panama Canal to Gulf Coast ports, the Virgin Islands, and the Atlantic states. Also omitted from analysis are projected trade routes for Alaska OCS crude to be taken to Japan and other Far East nations. In other words, the comparative analysis of the risks of oil spills is simply inadequate in the SID and draft EIS.

In light of the natural resource damage estimates of the Exxon Valdez Oil Spill ("EVOS") reported in the press, which range from $3 to $10 billion, the benefits of the Proposed Program may very well be illusory. The SID and draft EIS do not analyze with any rigor the comparative economic effects of oil spills, on a geographic basis. The MMS has been criticized by the National Academy of Sciences for overestimating the rates of recovery from oil spills without any factual or scientific basis. E.g. National Academy of Sciences, "The Adequacy of Environmental Information for OCS Oil and Gas Decisions 5 (1989)(copy attached as Exhibit A). These documents fail to fulfill their function of informing Congress, the decisionmaker and the public of the environmental and other effects of the Proposed Action and reasonable alternatives if

they fail to adequately describe the effects of oil spills. To represent that the Proposed Program has a net economic benefit of $7.3 billion is for this reason irresponsible and unlawful.

IV. Missing information regarding the Exxon Valdez oil spill

One of the most informative events has been almost completely excluded from the SID and draft EIS: the findings relating to the Exxon Valdez oil spill ("EVOS"). While there are numerous references to the event, none of the crucial data and findings are included in these documents. For example, these documents fail to note that the EVOS oiled 1,285 miles of shoreline, that Exxon spent more than $2 billion in cleanup efforts, that the Alaska and federal governments have spent over $150 million responding to this spill so far, that an estimated 5,500 sea otters and 580,000 birds died as a result of the spill. The SID and draft EIS ignore the fact that murres in the Prince William Sound experienced complete reproductive failure for the 1989 and 1990 breeding seasons,[2] and that the full effects on salmonid fish populations are not yet known, especially for native runs. Hatchery fish have had 50% mortality rates, with morphological abnormalities including club fins and curved spines. See generally Summary of Effects of the Exxon Valdez Oil Spill on Natural Resources, March 1991 (copy attached as Exhibit B). The fact that Prince William Sound had a record run of pink salmon this year is irrelevant, since the record run was predicted due to a huge release of hatchery fish. No data is available yet on the cohorts of salmon most susceptible to the EVOS. The SID and draft EIS do not include or reference the economic estimates of natural resource damage, which have been reported to total $3 to $10 billion. "Value of Intangible Losses from Exxon Valdez Spill Put at $3 Billion," Washington Post A4 (March 20, 1991) (copy attached as Exhibit C). The EVOS studies and reports, as a matter of public policy because of their importance to the current MMS decision, should no longer be subject to any claim of litigation privilege, and should be made fully public. The SID and draft EIS, upon revision, should include this information.

V. Leasing in the Alaskan OCS should be deferred

As flawed as the draft EIS and the SID are, they do contain sufficient information to support the conclusion that oil and gas exploration and development in the Alaskan OCS should not be expanded at this time. For example, under the Proposed Program, it is projected that:

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[2] The results from the 1991 breeding season have not yet been made public.

- Alaska's maritime national parks, monuments, preserves, and wildlife refuges -- the crown jewels of our public lands -- will be threatened by 14 large oil spills which will occur under the Proposed Program
- Infrastructure costs of development of oil and gas in the arctic will be massive, and natural gas deposits cannot be economically exploited because of these costs
- There is no demonstrated technology to thoroughly clean up oil spills under most Alaskan sea conditions, especially in the broken ice conditions and storms prevalent in the Alaskan OCS
- OCS developments in Alaska are projected to result in long-term alterations of Alaska land use patterns, including dysfunctional social effects which will be sustained and perhaps in increased in Alaska's Native communities
- The effects of oil spills are projected to last more than ten years and threaten sensitive marine mammals and other species, including steller sea lions (which are projected to take six generations to recover from the effects of projected spills) sea otters (will take three generations to recover)

These impacts, acknowledged under the Proposed Program, suggest that there will be significant costs of pursuing the Administration's expanded OCS leasing program.

VI. Page-specific comments[3]

A. Summary and Decision Document

page 9: lacks discussion of conservation alternatives, including increased Corporate Average Fuel Efficiency ("CAFE")

page 15: Incorrectly states that social costs under the Proposed Program are reduced; ignores the fact that all Alaskan oil will be shipped by tanker, thus understating the

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[3] These comments also address the appendices cited in the referenced pages.

social cost of the preferred alternative

page 21: Relative Marine Productivity is a meaningless statistic under the approach taken by MMS. It is arbitrary and meaningless to have a unit area measurement of "productivity" when the Planning Areas are not standardized by geographic size or biota. The planning areas were created for administrative convenience, and to use a unit measure by averaging estimated phytoplankton biomass over the entire planning area does not fulfill the OCSLA mandate to compare relative productivity.

page 23: Relative Environmental Sensitivity comparisons are meaningless without a rigorous study and explanation of the potential time for habitat and population recovery from an oil spill -- something that has never been studied anywhere in the world in a statistically and biologically valid way after a major oil spill. The failure of the Summary, the draft EIS and the SID to note this fact violates OCSLA.

Also, the Relative Environmental Sensitivity analysis should include geographical factors which affect the likelihood, fate and effect of oil spills. This should include a comparison of such factors as the effects of oil spilled in broken ice conditions, the threats of sea ice, permafrost, shallow gas hazards, sea ice scour and storm frequencies.

page 25: The fact that six planning areas are not ranked here demonstrates that insufficient data exists to support the Relative Environmental Sensitivity analysis. Thus, under NEPA and OCSLA, MMS has failed to adequately analyze the effects and comparative risk of exploration, leasing and development among all planning areas. At a minimum, exploration and leasing cannot take place, as a matter of law, in the following unranked planning areas until the requisite data has been collected and the comparisons performed: Aleutian Basin, Bowers Basin, Navarin Basin, Chukchi Sea, Hope Sea, St. Matthew-Hall.

pp. 26-27 This discussion ignores the adverse environmental effects of existing North Slope causeways, water pollution problems resulting from tanker deballasting at Port Valdez and other projected tanker terminals, and hydrocarbon emissions from tanker loading. See State of Alaska, Department of Environmental Conservation, Proposal to Regulate Emissions of Volatile Organic Compounds from Loading Crude Oil Tankers at 2-3 (Sept. 7, 1990)(copy attached as Exhibit D); State of

Alaska, Department of Environmental Conservation, Report to US EPA pursuant to Section 305(b) of the Clean Water Act (1990)(excerpt attached as Exhibit E).

page 27: The attached summary of natural resource damages from EVOS provides empirical evidence that animal populations can be decimated by oil spills for years to come -- perhaps permanently. Thus the conclusion that oil spills will have temporary, minor effects, or no effects on animal populations, is simply unfounded. See also the NAS criticism of MMS's analysis of oil spill recovery rates cited above.

page 28: Effects of causeways are understated; an oil field of sufficient magnitude to justify the expense of building a causeway in the arctic will have a likely life in excess of 20 years. Thus the adverse effects of causeways will last at least that long. Moreover, we are aware of no causeway or artificial island in the American arctic, or anywhere else in the world, which has ever been removed. Oil companies can be expected to walk away from removal of causeways, and the Corps has inserted language in its permits that causeways will be removed only if the Corps thinks it is necessary or cost-effective. In other words, this summary understates the likely effects of causeways.

page 33: Any coastal buffers, to be biologically useful, must have a biological basis, and must include areas of critical and important habitat, as identified in previous EISs. The SID and EIS do not adequately identify these critical and important habitat areas in Alaskan OCS waters.

B. Comprehensive Program (Secretarial Issue Document)

page xvii It is inappropriate to assume a reduced risk of tanker spills under the Proposed Alternative, as discussed above.

page xix: OCSLA provides for leasing programs to be adopted in five-year increments. MMS cannot legally plan for leasing without the periodic five-year report, public review and public comment.

pp. 16-17 The SID is legally inadequate because it does not identify alternatives considered but not given detailed study. In particular, the following alternatives do not appear to have been studied:

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a) increased efficiencies in home/industrial heating and cooling, as alternatives to meet demand for oil consumption (apparently only assessed as means to meet natural gas demand)

b) alternatives to transportation, i.e., improvements in costs and access to telecommunication infrastructure to reduce plane and automobile travel, work at home, etc.

page 19: It is a huge, and erroneous, assumption that the United States has conserved all that it can. The failure to more adequately discuss conservation techniques and technologies as an alternative to expansion of the OCS is a violation of NEPA and OCSLA.

page 19: Increased cost to energy users is often, although not always, a result of internalizing the "externality" of energy efficiency and environmental degradation. By internalizing costs, energy users will be paying for the "true" costs of their energy consumption. The statement in the draft EIS regarding costs of conservation constitutes an avoidance of OCSLA's and NEPA's mandate to adequately assess reasonable alternatives; it does not address the fact that internalized "costs" will lead to efficiency "benefits" and savings.

page 20: It is inappropriate to assume that OCS units must be leased in order to delineate a field. First, it ignores the reality that currently many unleased areas are explored prior to leasing on speculation by independent exploration firms or oil companies. If fact, MMS is required by law to assess the resource prior to leasing, so long as that exploration is done in an environmentally sound manner.

pp. 65-67 As discussed above, Relative Marine Productivity as used in the SID is a meaningless statistic without standardization. MMS must, as a matter of OCSLA law, defer leasing until better data allows a reliable basis for comparing Relative Marine Productivity. Appendix 10, Table 10-A-4 is thus completely useless.

page 70: It is a faulty assumption that each planning area has geographic uniformity. This is a violation of NEPA and OCSLA to assume this without a factual basis, and renders the Relative Marine Productivity and Relative Environmental Sensitivity analyses fatally defective.

page 71: The admission that there is a lack of information regarding coastal waters and habitats undermines the entire conclusions in the SID and draft EIS regarding environmental risks. MMS should have drawn the same conclusion regarding measurement of primary productivity (i.e. phytoplankton) as was drawn regarding other measures: "the scientific information on ... productivity remains too sparse to provide a meaningful analysis." SID, at page 71.

page 72: The National Marine Fisheries Service came to a contrary conclusion -- one which we don't agree with -- that sufficient data about noise exists to conclude that exploration in the Beaufort and Chukchi Seas will have a negligible impact on marine mammals. See U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Environmental Assessment on Proposed Regulations Governing the Taking of Small Numbers of Marine Mammals Incidental to Oil and Gas Exploratory Activities in the Alaskan Portions of the Beaufort and Chukchi Seas form 1989-1993 (May 11, 1989)(copy attached as Exhibit F). If NMFS is correct, which we doubt, then MMS should have included an analysis of noise here. Who is right, MMS or NMFS?

page 74: The reference to the CSA study, that "[a] standard methodology for determining habitat extent was developed and quantitative estimates for shoreline, coastal and benthic habitats were determined for all 26 OCS planning areas," undermines the statement made earlier on page 71 that "absent specific information on the relative contribution of coastal waters and habitats to the primary productivity of any of the planning areas, we have assumed that the total estimated primary productivity value is an acceptable surrogate." Again, which statement is correct? The quote on page 74 suggests that the statement on page 71 is incorrect, that there is data to apply, and that therefore the use of phytoplankton biomass averaged over the entire planning area did not fulfill the mandate of NEPA, OCSLA and EPA to use the best available information and compare the resources in the different planning area.

page 75 and Table 17:

As before in the comment on the Summary, the fact that six planning areas were not ranked in this analysis undermines the comparative analysis, since all planning areas are to be compared. This is an admission that

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there is insufficient data to rank relative environmental sensitivity for the unranked planning areas. At a minimum, the six unranked areas cannot be opened to leasing or exploration until sufficient data is provided and reviewed by the public.

page 145: We note that production of natural gas in the Alaskan OCS remains uneconomic, suggesting that the only benefit of Alaskan OCS exploration and development is production of oil. Yet oil must be transported by tanker from Alaska. Thus the Proposed Alternative has essentially the same environmental risks as the No Action alternative. Thus the SID understates the adverse effects of the Proposed Program.

page 146: MMS admits here the lack of data regarding reserves in the Alaskan OCS, thereby undercutting the projected benefits of exploration and leasing under the Proposed Alternative. The description of the effects of exploration activities here is inadequate.

pp. 152-153:

There is no excuse for MMS failing to use the GIS system to compare habitats in comprehensive planning. Both the Park Service and the Forest Service have used GIS databases in programmatic EISs. E.g. U.S. Dept. of Agriculture, Forest Service, Tongass National Forest Land Management Plan Revision, Draft Environmental Impact Statement (June 1990)(excerpts attached as Exhibit G); U.S. Dept. of Interior, National Park Service, Denali National Park and Preserve, Cumulative Impacts of Mining: Final Environmental Impact Statement (1991)(excerpts attached as Exhibit H). The failure of MMS to use a GIS database to collate and present habitat data (such as, for example, pinniped haulout areas, migration routes, kelp beds, etc.) here is inexcusable, and renders the SID and draft EIS flawed because there is not reliance on the best available information, as required by NEPA, OCSLA and ESA.

page 170: The SID fails to describe the air quality problems for tanker loading at Port Valdez, an environmental impact that will continue under the Proposed Program and any leasing in the Beaufort Sea as a result of the Proposed Program.

page 171: The distribution and populations of marine mammals, seabirds and other arctic species are essentially unknown in the American arctic OCS. See, e.g. Exhibit F. For

MMS to misrepresent this data gap, and fail to describe ways to close it, is a violation of NEPA's, OCSLA's and the ESA's mandate to fill data gaps using the best available information.

page 176: There is inadequate discussion of waivers of lease stipulations. We are informed that MMS has been waiving lease stipulations which had been designed to protect marine mammals and other resources in the Alaska arctic -- but no public notice was given of the waiver of the lease stipulations. Claiming that lease stipulations will mitigate adverse environmental effects is disingenuous if MMS later waives the stipulations. To be an adequate discussion of mitigation, MMS must include a discussion of its practice of waiving lease stipulations in the Alaskan OCS.

page 179: More discussion of OHMSETT is required here, especially as it relates to tests of in situ burning. Absent a fuller discussion of how cleanup techniques are tested at OHMSETT, including the design of such tests, the decisionmaker, the public and Congress are left uninformed as to the mitigation of oil spills.

Appendix 6, page 14:

The statement in this document that the costs of environmental degradation have been effectively shifted to operators is dead wrong. The litigation and settlement of EVOS is empirical proof that operators are willing to use litigation to delay payment of compensation for oil spill damages, that the Trans-Alaska Pipeline Act liability fund was underfunded and ill-administered, and that ultimately the costs of environmental degradation are not fully internalized by oil companies. The continuing controversy regarding air pollution caused by oil rigs offshore of California is further proof that the oil industry is intransigent about internalizing environmental costs.

Appendix 10, Table 10-A-2:

This table documents the poor databases for water column primary productivity. Therefore, there is no adequate basis for inter-area and inter-regional comparisons drawn in the text of the SID. There is no explanation why better data cannot be obtained, and this admission undermines the comparative analysis. This is a failure of the mandate of OCSLA, NEPA and the ESA to use the best available data, or explain why sufficient data cannot be

obtained.

C. The Draft Environmental Impact Statement

page v and II-1:

Again, the discussion understates the effects of the Proposed Program by ignoring the fact that the Alaska OCS oil will be delivered by tanker.

page II-9 The attached natural resource damage summary from EVOS demonstrates that the effects of oil spills are more severe than stated here, yet still the full effects are unknown.

The conclusions drawn here are not supported in the absence of description of the tanker traffic patterns on the Pacific Coast, to Hawaii, Japan, the Far East and Panama, which are likely routes of transit for Alaska OCS oil.

pp. III-53 to III-55
As discussed above, the discussion here ignores the adverse effects of air pollution from tanker loading, water pollution from tanker deballasting, and alterations in water temperature and salinity by causeways.

page III-57:

The discussion here ignores contrary scientific evidence that suggests that bowhead whales will avoid drill rigs and other industrial activities. This suggests that exploration and development in the Alaska arctic may disrupt migration of bowhead whales. Failure to address these data is a violation of NEPA, the ESA and OCSLA.

page III-65:

This discussion of polar bears is so filled with typographical errors that is impossible to comment. This discussion should be edited and resubmitted for public comment in another draft of the EIS.

page III-72:

The discussion here omits discussion of the effects of oil on salmon, including juvenile and salmon fry.

page III-75 to III-81:

Although the EIS here identifies national parks, monuments, preserves and national wildlife refuges, there is no comprehensive discussion of the effects of projected oil spills on these "crown jewels" of our federal lands.

page III-87:

The EIS admits the potential significance of freighter and fishing vessel traffic through Unimak Pass, but does not quantify this traffic, does not quantify marine mammal traffic through the same pass, and does not assess the potential cumulative impact on marine mammal migrations -- including endangered gray whales -- of additional exploration vessel and tanker traffic. This is a violation of NEPA, OCSLA, the MMPA and ESA.

page IV.A-1:

The discussion admits that exploration may have a significant impact, yet there is inadequate discussion of the effects of seismic activity, vessel traffic, airplanes, risks of oil spill. Regarding the risk of oil spills from exploratory wells, the EIS and SID both completely fail to discuss the most recent blowout which occurred in 1989 in the Canadian Beaufort Sea. E.g. National Energy Board (Canada), Report of Investigation of Events Culminating in a Blowout of Gas at Gulf et al. Immiugak N-05 (Dec. 1989)(excerpt attached as Exhibit I).

page IV.A-33:

The draft EIS here fails to explain why missing information regarding effects of exploration were not provided, in violation of NEPA and OCSLA.

page IV.A-34:

The discussion here does not explain what species was involved in the referenced study. It is inappropriate to extrapolate data between marine mammal species, the behavior of which may be completely different. This discussion is inadequate under NEPA and OCSLA.

page IV.A-35:

Again, there is a failure to identify and discuss contrary scientific studies which suggest that oil and gas exploration and development could have an adverse

impact on bowhead whales.

page IV.D-457:

This discussion of the Niakuk causeway should be deleted. The proponent of the project, BP Exploration, has withdrawn its application for a Section 404 permit, the Section 401 certification by the State of Alaska has been vacated, and BP is looking at alternatives to gravel-filled causeways to reach this oil field.

page IV.D-473:

The discussion on this page omits the fact that Prudhoe Bay is listed as an impaired waterway due to the adverse effects of the existing gravel-filled causeways. The decisionmaker should be informed of this fact.

page IV.D-484 to IV.D-485:

Again, discussion of tanker loading emissions as a source of air pollution is omitted.

Appendix D, at page 16:

There is no basis stated for the estimated 98% efficiency of oil removal by in situ burning. In the absence of more complete description of the study methods and assumptions, the decisionmaker, Congress, and the public are left with the incorrect impression that in situ burning is a reliable method of cleaning up oil spills. This discussion is not adequate under NEPA or OCSLA.

Appendix F:

In a post hoc effort to address the fact that MMS had violated NEPA and OCSLA by failing to adequately analyze leasing which was presented as alternatives, MMS has prepared Appendix F. This is a slap-dash approach that is legally inadequate and filled with the obvious statements and conclusions that was condemned in NRDC v. Hodel. This appendix does not satisfy NEPA or OCSLA, and MMS should redraft the entire EIS, incorporating and expanding the discussion of these proposed alternative sales into the main body of the EIS.

Conclusion

For the reasons stated above, MMS should redraft the SID and EIS and reissue these documents for further public comment. In any event, no additional leasing or exploration in the American OCS, including the Alaskan OCS, may be permitted in the absence of substantial revisions of these documents.

I thank you for the opportunity to submit these comments.

Very truly yours,

Robert B. Briggs

cc: (w/o encls.)

Hon. George Miller
National Marine Fisheries Service
Pam Miller, Greenpeace USA Inc.
Mary Grisco, National Parks and Conservation Association

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October 29, 1991

Ref: 821

Minerals Management Service
Environmental Projects Coordination Branch
381 Elden Street
Herndon, VA 22070

RE: Draft Environmental Impact Statement for Five Year OCS Leasing Plan

Dear Sir or Madame:

These comments on the Draft Environmental Impact Statement ("DEIS") on the Minerals Management Service's Comprehensive Outer Continental Shelf Program ("the Program") are submitted on behalf of the Delta Chapter of the Sierra Club. These comments were placed in the United States mail on October 29, 1991, and according to my conversation with Mr. Dick Wilderman of you office, will be considered submitted by the October 29 deadline.

The Delta Chapter consists of over 3,000 members, located across the state of Louisiana. These comments will primarily address those aspects of the DEIS dealing with the Gulf of Mexico Region, and specifically the Central Gulf of Mexico. These comments will not specifically address a number of extremely important aspects of the Program, but instead will concentrate on the analytical and informational shortcomings of the DEIS with respect to the Central Gulf. We join, however, in the comments of the Natural Resources Defense Council and the State of Louisiana addressing other aspects of the Program.

I. GENERIC CONCERNS

A. The DEIS Appears Calculated to Justify a Decision That Has Already Been Made

The present DEIS shares a problem with the EIS' dealing with OCS leasing and development that have preceded it: the decision to open areas for leasing has already been made, and the the EIS seems designed to justify that decision rather than actually take the "hard look" at environmental consequences required by the National Environmental Policy Act. For example, as detailed below the environmental consequences of rampant OCS development in the Gulf of Mexico region have been understated in a manner that can only be described as willful. Potential environmental impacts about which little information exists are glossed over or are assumed to be negligible. In some cases, for example with respect to socioeconomic information concerning areas proposed for leasing, the information available is even less than what the National Academy of Sciences identified as inadequate for leasing decisions offshore Florida and California (NAS 1989). Yet the

Proposal and the DEIS will apparently make these areas available for leasing without any provision for gathering the necessary information. If the MMS intends to proceed with lease sales in spite of the acknowledged inadequacy of the information available, it should explain clearly the fact that it is doing so, and explain on the record and in detail the justification for that decision. As presently drafted the DEIS is little more than a "puff piece" for offshore oil exploration, justifying decisions that appear to have already been made.

B. Failure to Cite sources

The Council on Environmental Quality's regulations governing the preparation of Environmental Impact Statements state that in preparing an EIS the agency "shall identify any methodologies used and shall make explicit reference by footnote to scientific and other sources relied upon for the conclusion to the statement." 40 C.F.R. § 1502.24. Throughout the DEIS there are numerous assertions of fact that are not cited to sources, and numerous conclusions of fact that are likewise not cited to authority. For most of the conclusions, no methodology is supplied, and the reader is essentially left to guess how the MMS arrived at the conclusion. Virtually every page of the DEIS dealing with the projected effects of leasing in the Gulf of Mexico Region contains conclusions of this sort. Specific examples are noted in our comments on the discrete sections of the DEIS. These unsupported conclusions are particularly disturbing in areas such as the expected effects of oil spills on wildlife and the coastal environment. To the extent that the DEIS contains conclusions that are for all practical purposes pulled out of thin air, it is in violation of the CEQ regulations. Each factual conclusion should be cited to a specific source, and when extrapolations from the sources are made, the methodology used to make the extrapolation must be described.

C. Failure to acknowledge scientific uncertainty or perform appropriate studies

The CEQ's regulations also provide very specific guidance concerning the treatment of scientific uncertainty in an EIS. 40 C.F.R. § 1502.22 specifically provides that when "there are gaps on relevant information or scientific uncertainty, the agency shall always make clear that information is lacking or that uncertainty exists." In a number of areas the DEIS glosses over or fails to acknowledge the existence of scientific uncertainty or the gaps in relevant information concerning the impacts of OCS development. Frequently the DEIS treats this lack of information as proof that no impacts exist. Specific examples are given in the discussion of the discrete sections of the EIS, but overall this Pollyanna-ish attitude violates the spirit and the letter of CEQ regulations. In cases in which the necessary research has not been performed, the MMS must specifically state that the information to evaluate possible impacts is not available, and it

is therefore unknown what the impacts may be. For example, with respect to the effect of drilling mud discharges in deeper depositional environments, the MMS should state clearly that no research has been done in this area, and that the environmental consequences of leasing and development cannot be predicted with any certainty.

This failure to acknowledge the uncertainty surrounding many impacts of OCS development is closely related to the MMS' chronic failure to perform the studies necessary to determine the actual effects of OCS activities in the Gulf of Mexico Region. As has been pointed out on many occasions, only 15% of the money spent on OCS studies has been spent in the Gulf of Mexico Region, despite the fact that over 90% of OCS development has occurred here. The National Academy of Sciences has recently criticized the adequacy of the MMS information and information gathering with respect to OCS leasing (NAS 1989, 1991). The DEIS does not even acknowledge this fact, and makes no attempt to describe how the deficiencies in information will be evaluated prior to lease sales being held. The MMS cannot expect to do an honest and accurate evaluation of OCS development impacts so long as it insists on keeping its eyes closed. The MMS must immediately begin taking the steps necessary to fully evaluate all of the impacts of OCS activities to the marine, coastal and human environments of the Gulf of Mexico.

D. The Proposal Is Completely At Odds With President Bush's Announced OCS Policy

On June 27, 1990, President Bush directed the Secretary of the Interior to take several actions with respect to OCS development. Two are of particular relevance to this DEIS. First, the Secretary was directed to improve the information needed to make decisions on OCS development. The DEIS should explain how over the course of the Proposal this goal is to be accomplished. Since OCS leasing is a phased process, this is directly relevant to the volume and quality of information that will be available for future leasing decisions under the Proposal.

Second, the President directed the Secretary to target areas of the OCS with high resource potential and low environmental risk, offering smaller and more carefully selected blocks of tracts. Despite this injunction, in the Gulf of Mexico region the Proposal retains the "area leasing" concept, which is precisely the opposite of targeting areas with high potential and low environmental risk. Indeed, if we are to believe that this plan complies with the President's directive, we must assume that the entire Gulf of Mexico is an area of high potential and low environmental risk. This is patently ridiculous, and the DEIS should explain at length the reasons why this clear policy directive has been ignored in the Gulf of Mexico Region.

E. Failure to Discuss an Alternative to Area Leasing for the Gulf of Mexico

It is absolutely baffling that the DEIS does not consider an alternative that would involve more narrowly focused lease sales for the Gulf of Mexico Region. Area leasing has been abandoned in all other areas of the U.S., and no justification is advanced for retaining this outmoded concept in the Gulf of Mexico. Available economic analysis establishes that area leasing results in lower bid prices not just on OCS leases, but on leases in state waters as well. Why the MMS wishes to retain a system that simply transfers public benefits to private oil companies, costs the coastal states money, and prevents reasonable planning for coping with OCS development should be explained. Dropping area leasing for the Gulf of Mexico is clearly an available and feasible alternative under NEPA and the CEQ regulations. It is also an alternative which, if honestly evaluated, would have beneficial effects for state government, federal government, and the environment.

In addition, the State of Louisiana has clearly indicated to the MMS that area leasing is inconsistent with the Louisiana Coastal Zone Management Act. The EIS should address specifically the inconsistencies with the LCZMA raised by the state, and explain how area leasing will be conducted in the future in a manner consistent with the LCZMA. The DEIS should specifically address whether mitigation measures such as impact assistance to coastal communities, the creation of wetlands or other measures will be undertaken in order to ensure that the proposed leasing is carried out in a manner consistent with the LCZMA.

F. Failure to Discuss Solid Waste Disposal Problems

As in other areas of the country, landfills in Louisiana are approaching capacity. OCS development generates a lot of solid waste, including oil based drilling muds, pipe contaminated with radioactive material, used lubricants, machinery, and so forth. The DEIS fails altogether to discuss the impact that this solid waste will have on existing or projected landfill capacity. This is a critical area that the MMS apparently does not even consider relevant to the decision to be made.

II. SPECIFIC COMMENTS ON THE DEIS

A. Description of the Affected Environment

Page III-14 - The DEIS notes that loss of nursery grounds due to coastal erosion constitutes a serious threat to Gulf of Mexico fisheries, but fails to acknowledge Turner and Cahoon's conclusion that a very significant percentage of this nursery loss is attributable to OCS oil and gas activities. This fact should be acknowledged.

Page III-18-19: The DEIS again fails to note that Turner and Cahoon give specific figures for the amount of land loss attributable to OCS activities.

Pages III-30-32: It is shocking that the preparer considered the entire community structure of the Gulf of Mexico Region as it

relates to OCS development to consist of extrapolated employment statistics, estimates of tax revenues created by OCS development, and estimates of future population growth in the region. Numerous studies exist to indicate some of the effects of OCS development on Louisiana and its coastal communities, but the preparer apparently is unaware of or ignores this material. *See,e.g.*, Gramling and Reilly (1980); Gramling and Brabant (1984,1986); Louisiana Department of Natural Resources (1991). In addition, the DEIS should discuss the infrastructure costs that OCS development visits on the affected coastal states and communities. If no such information exists, the DEIS should acknowledge that fact. Simply citing tax revenues leaves the entirely misleading impression that OCS development is a financial boon to the adjacent states, which has not been established to be the case.

Pages III-35-38: The DEIS properly acknowledges that the "bust" resulting from decreased OCS development has resulted in increased pressure on fisheries stocks. This information is not correlated either here or in other portions of the DEIS to the fact that many Gulf fisheries stocks are in serious danger from overfishing. The "boom-bust" cycle caused by OCS development thus appears to be directly tied to overfishing, and a very real threat to one of the nation's most important fisheries. This fact must be acknowledged.

B. Generic Impacts Associated With Oil and Gas Activities

Pages IV.A-14-15: It is again frankly incredible that the preparer has chosen to entirely ignore the most significant impacts of OCS leasing and development on coastal communities. Boom-bust economic cycles, with accompanying social ills, are documented facts. The DEIS must honestly and adequately describe these impacts.

Page IV.A-16: As noted above, the DEIS acknowledges that OCS activity related employment patterns lead directly to overfishing of Gulf stocks. How then can the DEIS content itself with the superficial discussion here? In addition, the DEIS has noted earlier that loss of nursery habitat has a serious impact on fisheries stocks, and OCS development is directly linked to a significant percentage of that habitat loss. These facts must be acknowledged, along with the obvious conclusion that OCS activity has made a significant contribution to the perilous predicament of the Gulf's fisheries.

Pages IV.A-19-23: Although MMS has in other documents stated that the effect of drilling discharges in deeper depositional environments of the OCS is unknown, the discussion makes it appear that the scientific consensus is that such discharges are not a matter of concern. See MMS (1990). The DEIS should state that the effect of such discharges in many environments is unknown. The same admission should be made in the later discussion of the effect of routine discharges on the biological community.

Page IV.A-32: In the extremely brief discussion of the effect of chronic discharges on fisheries, there is an internal inconsistency. The discussion first states that information on sublethal and chronic effects is generally lacking, but then goes on to state that the direct effects are low. The data and methodology utilized to reach this conclusion should be specifically identified and discussed.

C. Programmatic Concerns

Page IV.B 2-3: The MMS' absolute refusal to accept the findings of the National Academy of Science's 1990 report is nowhere more clear than in this passage. It is fundamentally silly to dismiss the very real social effects of offshore oil development by simply dismissing them as "subjective." The MMS might do well to ask itself the question: does this section actually acknowledge, or do anything to address, the problems the NAS noted in its study of proposed leases in California and Florida? The only honest answer is that it does not. This section appears to have been inserted in the hope of giving the appearance that these problems were being addressed. This section should clearly acknowledge the deficiencies in past analysis, and in the data available for this EIS with respect to all OCS areas, including the Central Gulf of Mexico. It should also address what the MMS intends to do to address these deficiencies.

D. Environmental Impacts of the Proposed Action

Pages IV.D -3-6: The exploration and development assumptions fail to take into account one undisputed fact: a primary force driving exploration and development of offshore oil reserves is energy prices. It is therefore not just questionable, but downright silly, to include only graphs of projected future activity which are based on the assumption that all reserves will be explored for and developed on a regular, predictable basis. This scenario is not objectionable for what it is - any hypothetical scenario that follows from its premises is valid - but it is objectionable to use this fantastic hypothetical as the basis for predicting the physical impacts that will occur as the result of the proposed lease sales. The DEIS must acknowledge what past experience has so clearly shown: offshore activity will rise and fall according to the whims of the market, and levels of impacts can only be predicted to the extent that the market can be predicted.

Pages IV.D-17-18: The DEIS indicates that no new infrastructure, including pipeline landfalls, will be required to service the approximately 2360 wells expected to result from the proposal. The EIS for the 1987-92 Five Year Plan, on the other hand, projected that significant additional infrastructure would be necessary in the Central Gulf of Mexico (page IV.B.5-17) to service the 2442 wells expected to result from that proposal. This is only a 4% difference in the number of wells, yet the

infrastructure needs in the Central Gulf differs significantly. If the discrepancy is based on new information or a different methodology, this should be explained. If the prediction that no new infrastructure will be needed is a guess, that should be explained. In any case, the methodology and the basis of this conclusion must be made clear. In addition, population gains and infrastructure stresses resulting in part from OCS development result in increases in pollutants from sewerage treatment, urban runoff and similiar causes. These should be addressed in the EIS. Finally, and perhaps most seriously, many of the conclusions drawn in this section appear to be drawn from thin air. For example, on page IV.D-20, the DEIS states that chronic pollution from OCS-related coastal sources is expected to have a "negligible" effect. The DEIS needs to cite specific studies and methodology for this and all other conclusions.

Pages IV.D-111-14: Like virtually all of the other sections of the DEIS, this section contains a plethora of conclusions without supporting evidence. For example, the DEIS predicts fewer than 5 deaths to the brown pelican and piping plover from contact with an oil spill. What possible basis is there for such an assumption? In addition, the DEIS is inconsistent with the EIS for the 1987-92 Five Year Plan, which explicitly states that impacts on the brown pelican are expected to include population declines resulting in changes and distribution or abundance of the species. How has the analysis or information changed between then and now? The methodology - if there is one - underlying all of the conclusions concerning impacts must be made clear.

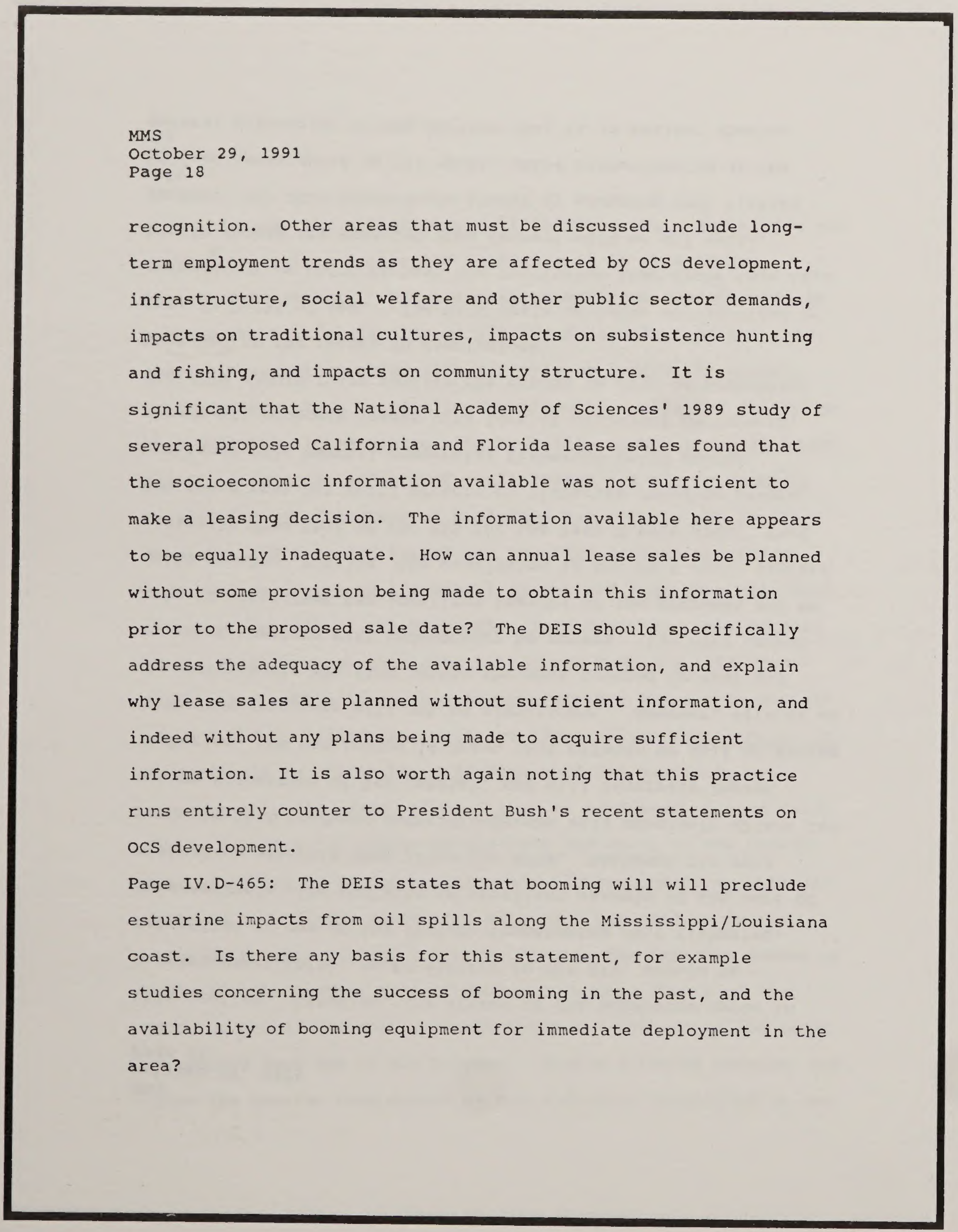
Page IV.D-83 et seq.: The analysis of wetlands impacts here is perhaps the most misleading of all the discussions in the DEIS. Many of the factors which will directly or indirectly cause wetlands loss, such as pipeline maintenance, saltwater intrusion from dredging, interference with hydrology caused by spoil banks, and the cumulative effects of small losses are simply ignored. In addition, as the State of Louisiana has pointed out in its comments, the Proposal itself and the DEIS contain radically different estimates of the amount of wetland loss that will take place as a result of the proposal. Interestingly, this portion of the DEIS does not even cite Turner and Cahoon's 1988 study finding that OCS activity was responsible for between 54,000 and 123,000 acres of land loss prior to 1979. Given that figure, it is difficult to credit the DEIS figure of 175 hectares, or approximately 430 acres, of land loss as proffered in good faith. Simply dividing the number of pre-1979 OCS wells in the Central Gulf of Mexico by Turner and Cahoon's figures indicates that the wetlands loss figure associated with each OCS well is in the range of between 3.3 and 7.5 acres. Using the expected number of wells for the Central Gulf of Mexico from page IV.D-3 of the DEIS, we should reasonably expect between 7,800 and 17,700 acres of wetland loss due to the Program. That's a lot of acreage, and given the massive loss caused by OCS and other activities in the

past, it is acreage that Louisiana can ill afford to lose. This section of the DEIS must come to grips with the extent of the problem, and as detailed below, the significance of the wetlands loss problem for other areas of analysis must be recognized. Finally, like all of the other sections of the EIS this one suffers from a lack of citation to the source materials and methodology, if any. For example, here as in other sections of the DEIS the assumption is made that 75% of the volume of any oil spill will be lost prior to the time that it contacts the coast. What is the basis for this assumption, and what would the effects be should it prove incorrect? Another example is the assumption on page IV.D-185 that 10% of OCS navigation channels would be deepened to accomodate the larger vessels and structures necessary for deep-water exploration. What is the basis for this assumption? As OCS exploration in the Central Gulf moves to deeper water, onshore impacts will increase as a result of larger vessels and greater infrastructure requirements. The validity of assumptions such as this one is critical to accurate analysis, and the DEIS must indicate the basis of those assumptions.

Page IV.D-150 et seq.: The analysis of effects on fisheries leaves out a number of key factors, as well as failing to cite sources. For example, loss of nursery habitat should be acknowledged as one of the key factors adversely impacting fisheries. A realistic assessment of the wetland and nursery area losses due to OCS development should be carried forward into this section. Likewise, the effect of the boom/bust cycle in causing overfishing, noted earlier in the EIS, should be recognized as one of the factors threatening Gulf fisheries. This analysis also contains an excellent example of the sort of misleading analysis that fills the DEIS. Although the DEIS projects that produced water discharges will adversely affect 345 square kilometers of key habitat, and will adversely impact fisheries, the conclusion is drawn that effects on Gulf of Mexico fisheries resources will not be significant. However, effects on the individuals who fish in the the area covered by that 345 square kilometers will undoubtedly be severe. The DEIS should make it clear that the localized impacts of the proposal may be quite severe. Finally, the conclusion in the DEIS again differs radically from that of the EIS for the last 5 year plan. That EIS found that oil spill effects on fisheries could be severe, and found that overall commercial fisheries would suffer measurable economic losses with loss of secondary employment. The DEIS should fully explain the change in data or methodolgy that led to the change in conclusions.

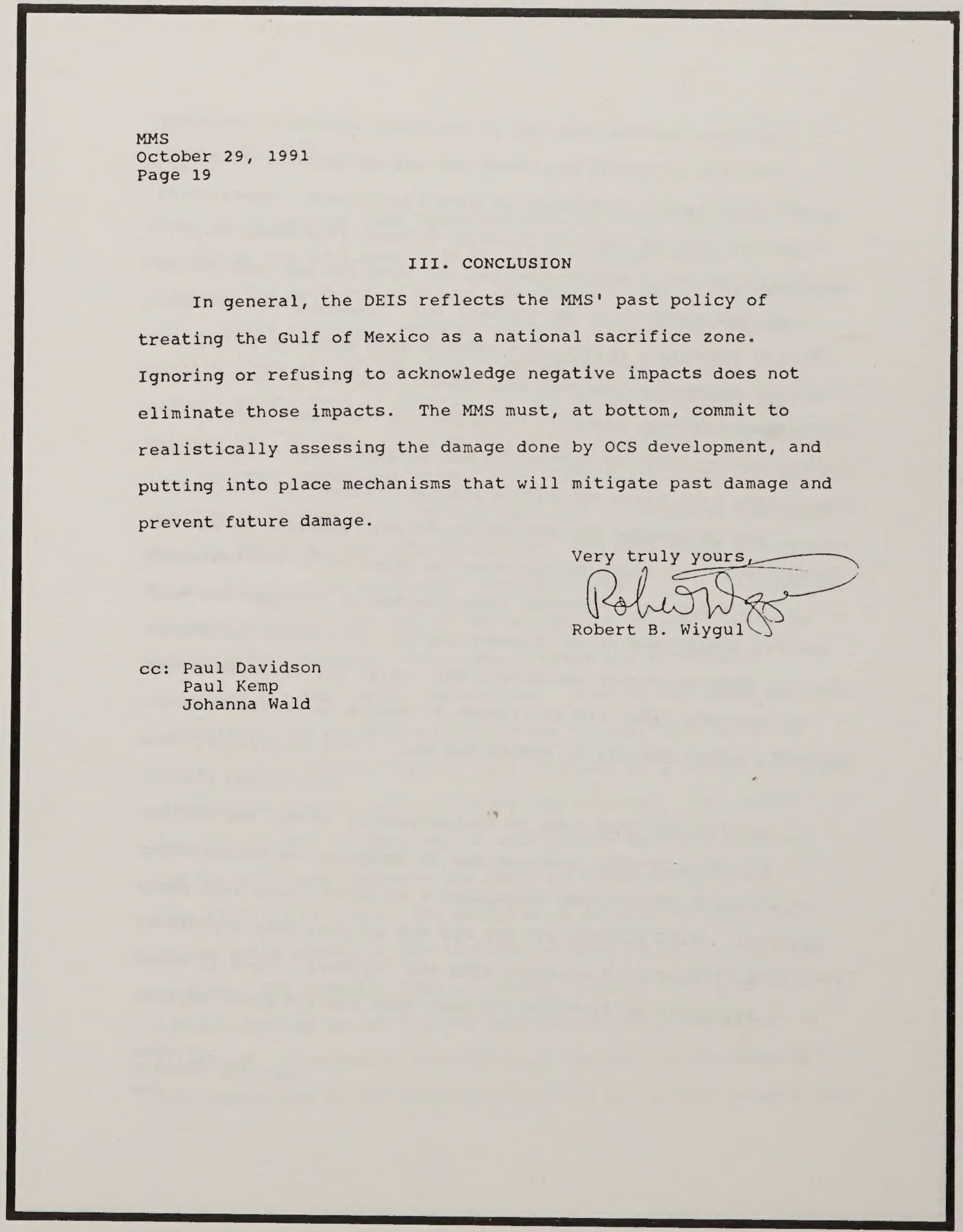
Page IV.D-175 et seq.: The DEIS again contains no citations or methodology on which to base the conclusion that fewer than five turtle deaths are expected from contact with an oil spill. Further, the DEIS contradicts itself by assuming that turtles will actively avoid an oil spill, while acknowledging in the general discussion of sea turtles that it is unclear whether turtles avoid oil and that they may actually be attracted to it (page IV.A-5). Finally, the DEIS contains a materially different conclusion from that of the EIS for the 1987-92 plan. That EIS found that there would be a population decline and a change in distribution or abundance of sea turtles. The DEIS should explain the change in methodology or data that led to this changed conclusion.

Page IV.D-219 et seq.: The inadequacy of the MMS studies program and data gathering effort in general is glaringly apparent in this section of the DEIS. The discussion addresses only employment impacts of OCS development, as if employment figures were the entirety of socioeconomic impacts. The State of Louisiana has on a number of occasions directed the attention of the MMS to relevant studies concerning the impacts of OCS development on coastal communities and the state as a whole. The MMS needs to stop treating the discussion of these impacts as a perfunctory exercise, and seriously consider the effects that OCS development is having. Indeed, the skeletal discussion in this section of the DEIS even ignores information contained in other parts of the document. For example, as noted above the DEIS states that the oil bust has led many former offshore workers to turn to commercial fishing, placing pressure on Gulf of Mexico fish stocks. Surely this sort of employment shift, with its attendant conequences for the long-term health of the most important renewable resources of the Gulf region, deserves



recognition. Other areas that must be discussed include long-term employment trends as they are affected by OCS development, infrastructure, social welfare and other public sector demands, impacts on traditional cultures, impacts on subsistence hunting and fishing, and impacts on community structure. It is significant that the National Academy of Sciences' 1989 study of several proposed California and Florida lease sales found that the socioeconomic information available was not sufficient to make a leasing decision. The information available here appears to be equally inadequate. How can annual lease sales be planned without some provision being made to obtain this information prior to the proposed sale date? The DEIS should specifically address the adequacy of the available information, and explain why lease sales are planned without sufficient information, and indeed without any plans being made to acquire sufficient information. It is also worth again noting that this practice runs entirely counter to President Bush's recent statements on OCS development.

Page IV.D-465: The DEIS states that booming will will preclude estuarine impacts from oil spills along the Mississippi/Louisiana coast. Is there any basis for this statement, for example studies concerning the success of booming in the past, and the availability of booming equipment for immediate deployment in the area?



III. CONCLUSION

In general, the DEIS reflects the MMS' past policy of treating the Gulf of Mexico as a national sacrifice zone. Ignoring or refusing to acknowledge negative impacts does not eliminate those impacts. The MMS must, at bottom, commit to realistically assessing the damage done by OCS development, and putting into place mechanisms that will mitigate past damage and prevent future damage.

Very truly yours,

Robert B. Wiygul

cc: Paul Davidson
Paul Kemp
Johanna Wald

SIERRA
CLUB

LONE STAR CHAPTER

October 20, 1991

Scott Sewell
Director
Minerals Management Service
1849 C Street, N.W.
Washington, D.C. 20240-7000

Attention: OCS Comprehensive Program
and Freedom of Information Act
Request

Dear Mr. Sewell,

Enclosed are the comments of the Lone Star Chapter of the Sierra Club and the Houston Group of the Sierra Club regarding the proposed Comprehensive Program for Outer Continental Shelf (OCS) Natural Gas and Oil Resource Management and two Volume Environmental Impact Statement. We request that our comments be given serious consideration and that our comments be addressed in full in the FEIS.

1) We are making a FOIA request for specific information referred to in this proposal. Our request also includes a request for waiver of any fee since the information will be used by the Sierra Club in further participation in the public input program MMS has on the OCS in the Gulf Coast and will be used in the public interest to ensure more protection for the land, water, and air resources of the Gulf of Mexico (GOM). Our information request is as follows:

a. One copy of the study mentioned on page 15 of the summary and decision Comprehensive Program 1992-1997 proposal, entitled, "Estimating the Environmental Costs of OCS Oil and Gas Development and Marine Oil Spills: A General Purpose Model, by A.T. Kearney, 1991.

b. One copy of the guidance sent to MMS Regional Directors earlier this year regarding full use of existing and any appropriate new mechanisms to obtain the information and views they need to hear outside the agency, as stated on page 119 of the decision documents, Comprehensive Program 1992-1997.

c. One copy of any information that MMS has regarding in-situ burning as mentioned on page 179 of the decision documents, Comprehensive Program 1992-1997.

d. A copy of the paper, POCS Technical paper No. 83-3, FSI, 1983, as mentioned on page IV.A-6 of volume 1 of the DEIS.

e. A copy of Gramling, 1990, as mentioned on page IV.B-3, of volume 1 of the DEIS and which is not in the bibliography (page VI-41-48).

f. A copy of any manual or other paper that explains the Offshore and Coastal Dispersion Model and its assumptions, data needs, accuracy, and how it functions and operates, as mentioned on page IV.D-36 of volume 1 of the DEIS.

"When we try to pick out anything by itself, we find it hitched to everything else in the universe." *John Muir*

recycled paper

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g. A copy of Effects of drilling muds and mud additives on the primary production of natural assemblages of marine phytoplankton, by Alldredge, Elias, and Gotschalk, 1986, as mentioned on page VI-2.

h. A copy of Effects of oil field brine effluent on sediments and benthic organisms in Trinity Bay, Texas, by Armstrong, Fucik, Anderson, and Neff, 1979, mentioned on page VI-5.

please
disregard
this one - we
have a copy

i. A copy of A Comparison of Marine Productivity Among Outer Continental Shelf Planning Areas, by Continental Shelf Associates, 1990, as mentioned on page VI-26.

j. A copy of Severe storm and hurricane impacts along the Gulf and lower Atlantic coasts, by DeWald, 1980, as mentioned on page VI-30.

k. A copy of Application of the urban airshed model in the Baton Rouge seven parish study area, by Haney, Douglas, Gardner, and Burton, 1990, as mentioned on page VI-48.

l. A copy of Fauna from a cold $\overset{u}{s}$ifer-seep in the Gulf of Mexico: comparison with hydrothermal vent communities and evolutionary implications, by Hecker, 1985, as mentioned on page VI-49.

m. A copy of A Study of the Effect of Oilfield Brine Effluents on Benthic Communities in Texas Estuaries, by Mackin, 1971, as mentioned on page VI-66.

n. A copy of A review of significant papers on effects of oil spills and oil field brine discharges on marine biotic communities, by Mackin, 1973, as mentioned on page VI-66.

o. A copy of Gulf of Mexico inert pollutant study, by MMS, 1986, as mentioned on page VI-114.

p. A copy of Effects on drilling operations on the marine environment, by Zingula, 1975, as mentioned on page VI-125.

2) MMS takes alot of time to explain how it includes the public regarding participation in the OCS program. For instance in the letter of July 31, 1991 from J. Rogers Pearcy and the MMS news release from the GOM Region it talks about the proposal was the result of careful analysis of the 700 comments received from the public. In addition there are a variety of other places throughout these documents that allude to this. Some of these include:

a. Page 4 of the summary and decision document which states, "It includes increased efforts to gather environmental and other information and to enhance the opportunities for States, localities, and other interested parties to participate in the decisionmaking process."

b. Page 52 of the summary and decision document which states, "Each MMS Region will develop appropriate consultation and coordination mechanisms to identify issues of concern and provide information."

c. Page 53 of the summary and decision document which states, "Other consensus-building techniques will be sought to facilitate participation of Federal, State, and local governments, industry, and the public."

d. Page 53 of the summary and decision document which states, "Coordination with interested and potentially affected parties is a vital aspect of the AEDP. Extensive contact with Federal, State, and local governments, universities, oil and gas industry groups, and the public assists in the acquisition and use of environmental and geologic information in offshore natural gas and decision processes ... A variety of coordinating mechanisms ensure broad and active participation in idenitifying issues and acquiring, synthesizing and evaluating environmental and oil and gas resource information ... Other planning areas may require expanded opportunities for public participation to ensure identification of concerns."

e. Page 54 of the summary and decision document which states, "During the implementation efforts, existing mechanisms will be used fully and the opportunity for new or different coordination will be reviewed ... Decisions are developed and coordinated with potentially affected parties ... The MMS develops study proposals annually by consulting with affected States, identifying issues through scoping and reviewing industry activities."

f. Page 59 of the summary and decision document which states, "During this review, the Regional Office will consult with other interested parties, identify issues of concern, and evaluate the status of the information base ... Potentially affected parties will be invited to participate in timely review of the information base for each leasing proposal. This review involves invitations to special meetings; requests for written comments; and/or inclusion of public discussions at regularly scheduled public meetings such as Information Transfer Meetings or Regional Technical Working Group (RTWG) meetings ... The approaches facilitating public participation will be tailored by the Regional Offices to fit the respective needs and interests of the affected public in the Regions. In general, MMS will invite interested parties to register for participation in Information Base Reviews. Additionally, Regional Directors will conduct outreach efforts to identify and invite potentially affected parties."

g. Page 63 of the summary and decision document which states, "... and scoping meetings may be held to provide convenient opportunities for broad participation in the process."

h. Page 65 of the summary and decision document which states, "To ensure an informed decision on the structure of the final EIS which is responsive to public comment on the draft EIS."

h. Page 2 of the decisions document which states, "These additional activities include: ... pursuing additional consultation and dialogue".

i. Page 108 of the decisions document which states, "Increased efforts to gather environmental and other relevant information and to constructively involve States and other interested parties in the decisionmaking process".

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j. Page 119 of the summary and decision document which states, "... consultation mechanisms such as workshops, information transfer meetings, Regional Technical Working Group meetings, and/or task forces will be used to provide MMS with a range of views from outside the agency ... MMS Regional Directors are being asked to make full use of existing and any appropriate new mechanisms to obtain the information and views they need to hear from outside the agency."

But MMS sends a mixed signal on this supposedly serious attempt at public outreach, participation, and input. For instance, on page 52 of the summary and decision document it states, "Each MMS Region will develop appropriate consultation and coordination mechanisms", and on page 53 it states that, "Other consensus-building techniques will be sought", and on page 53 it states, "Other planning areas may require expanded opportunities for public participation", and on page 54 it states, "existing mechanisms will be used fully and the opportunity for new or different coordination will be reviewed", and on page 59 it states, "The approaches facilitating public participation will be tailored", and on page 63 it says, "scoping meetings may be held", and page 119 of the decisions document says, "MMS Regional Directors are being asked to make full use of existing and any appropriate new mechanisms".

The problem with all of these statements are they are vague, subject to interpretation, general, non-specific, tentative, and meaningless to the public that wants and demands more public participation. The Sierra Club wants standards of public outreach, participation, and input programs spelled out in concrete so that there will be consistency between MMS Regional Offices regarding the minimum public participation that is required by MMS everywhere. As a result the Sierra Club makes these specific demands of required elements for public outreach, participation, and input programs for all MMS entities in the OCS program:

1) The Area Evaluation and Decision Process, as shown in a schematic on pages 74-81, Figures 2-5, in the summary and decision document, will be reconstructed so that it can be understood by the average person. CEQ regulations require that NEPA documents be understandable and these figures are confusing.

2) The National Studies List will be available to the public for a 60 day comment period so that MMS will get the public's comments on the priority setting process for the research monies that will be spent by MMS. A list will be required to be kept with people who have asked to be notified of the NSL's availability and a large PR program will be implemented to encourage as much public input as possible.

3) The Request for Information Comments (RFIC) will also have a 60 day public input period with PR program to maximize public outreach. When we were contacted about the RFIC it was by phone and we had zero time to develop comments. A list of interested people will also be kept for this.

4) For the after lease sale phase of the MMS OCS program there will be a public outreach program to let the public know that they can request to be put on lists to receive notice of any exploration plans, development and production plans, oil spill contingency plans, environmental assessments or reports, applications for permit to drill, pipeline permits, or other

major activities that MMS reviews and permits after leasing and that the public has 45 day comment period for any plan that it requests in writing (and will be sent a copy free of charge). Right now there is absolutely no formal mechanisms for the public to find out and participate in this process which makes MMS's claims of more intense focus on these more specific plans a lie regarding the public's ability to participate.

5) Public hearings will be held both in the day and the evening so that the majority of the public will not be shut out of the process as occurred at the New Orleans hearing for this document. Most of the public works for a living and cannot take off to attend public hearings during the day. It is time the public servants, who are paid by the public to do a good stewardship job, recognize that the public, not the public servant, is the owner of the government and must be given as many opportunities for public input throughout the entire OCS process, from call notices to the closing down of a field because production has played out.

6) MMS will ensure that a range of all reasonable alternatives are looked at in the EIS as required by the CEQ regulations so that the public as well as final decisionmakers will have an informed, broad choice of alternatives to choose.

7) The Environmental Studies Program (ESP) will also have a public outreach, participation, and input program with a list of people who want to receive information and comment on it with a 45 day comment period of any proposals.

In addition the RTWG will be reconstituted so there is a balance (that means equal representation) of interests including industry, environmental groups, fisheries groups, federal, state, and local land managers, researchers, and other interests. The Sierra Club has asked to be put on the RTWG in the GOM Region and we have been turned down. We are told that someone else represents environmental groups when in fact it is fishery interests that are represented. Further, if MMS insists on counting a fishery interest group as an environmental group then why can't there be two environmental group representatives since there are currently two industry group representatives on the GOM RTWG (Amoco Production Co. and Louisiana Land and Exploration Company)? MMS is being neither fair nor inclusive with respect to wanting real public participation and input. We therefore find it hard to believe that MMS is really serious about increasing avenues to the public to input.

8) That MMS make a real commitment, not just to put articles in peer reviewed journals, which have an extremely small circulation, but that MMS circulate widely articles or publications that are paid for with government money.

9) That MMS actively pursue getting other views at Information Transfer Meetings than the ususal industry and government and researcher input it usually seeks and gets in abundance. There must be at least one session each day of the ITM that is predominantly devoted to citizen input and gives citizens a chance to express their viewpoints.

Finally, under this comment about public input the Sierra Club requests that MMS remove any trace of its statement that it has based its decisions for this proposal "on careful analysis of the 700 comments received from ... the general public". From the Sierra Club perspective this is a untruth. The truth is that MMS overlooked our nine pages of single type written comments plus eleven attachments. We have been told tha comments accidentally got shuffled to the group that handles FOIA reque. because we made such a request. This makes no sense to us.

In addition MMS has refused our request that our comments and attachments be sent to all who received a copy of this EIS as a supplement and that time be allowed for any comments using our material. In addition MMS has not committed to implementing a mechanism to ensure that such an action does not occur again, not just to the Sierra Club, but to anyone who takes the time to send in comments. The public deserves better treatment than this.

The importance of sending our comments to everyone who has received a copy of the DEIS and allow comment time is several. One, it is the law that such comments be provided to the public, two, it allows others to see what the Club feels and to benefit from those comments, and three, the comments may help the reviewing public to also send in similar comments based on their personal experience or different comments that were forgotten but now remembered after looking at the comments send out to them. Thus you are preventing the public from benefiting fully from the NEPA process.

It is interesting that MMS is so little concerned about such a flagrant public participation and NEPA violation that even though I informed Paul Stang by phone of this problem on September 11th and Rasa Kregzdys of the problem at the Houston, Texas hearing on September 12th that as I type this letter on October 19th I have yet to receive any written response about what MMS will do about this problem. This does not bode well for public participation in the MMS OCS program and you will, I am sure, understand why we look upon any MMS claims of renewed interest and efforts at public participation with a jaundiced eye. Until we see proof from MMS of real efforts in this direction we will continue to disbelieve what the "paper says".

Comments on the Summary and Decision Document

1) On page 4 it states, "The Comprehensive Program addresses not only the years 1992-1997 but also lays the groundwork for decisions that will be faced after the five year period." If this statement is indeed true then MMS must discuss the long-term impacts of changing from an oil based economy to alternatively fueled economies. The fact is (see article enclosed) that the U.S. oil domestic market is suffering from disinvestment due to the fact that there are fewer and fewer large oil and gas finds and that the U.S. is relatively picked over for oil exploration. It is much cheaper and easier to search and find oil in other countries. This trend is a long-term one, having begun with the decline of oil finding in 1971. It will not be stopped and MMS must address how it can ease the transition and make it easier to get off oil. All indications are that MMS is trying to desparately stop an unstoppable trend.

One example of how MMS is doing everything possible to try to stop this trend deals with the protection of the Flower Gardens and other topographical highs in the GOM. Instead of choosing the most environmentally preferable alternative for the GOM which will have virtually no impact on getting out oil and gas (the oil and gas removal scenario is the same as MMS's favorite alternative, alternative 1, the proposed alternative), MMS ignores theExclude Designated Bathymetric Features, alternative 6. MMS in the past continues also to make deletion of the two tracts directly over the East and West Flower Garden Banks an option only, left up to the Secretary of Interior's discretion. Because of this in 1983 Sec. Watt allowed one of these tracts to be leased and only a last minute plea from the Governor of Texas pursuaded Exxon to drop its bid on this tract. There is no guarantee that this will not happen again unless MMS permanently takes the protection of the FG and other topo highs seriously and deletes tracts around them to ensure their protection from all OCS activities.

Further, MMS is engaged in research to prove their already held notion that the FG get too much protection from MMS right now. On page 77 of the GOM Draft Regional Studies Plan for Fiscal Year 1992, the research proposal entitled, "Flower Garden Banks Long-Term Monitoring Program, Field Year 5, MMS states, "Continuation of the proposed study during the 1992-94 period is important to validate the decision to relax lease stipulated requirements on the offshore industry to monitor exploratory or development and production activities within the 1-mile zone of these important submarine banks."

In addition MMS is in the process of deciding whether to allow an oil pipeline, of major proportions, to travel between the two banks thus threatening them with damage from leaks. This is unnecessary and takes chances that MMS does not have to condone. MMS does not balancing of environment and drilling but always comes down on the side of drilling when it really counts.

2) On page 5, MMS states that it has gained information from 100's of ESP, EIS, 5 year programs, and 30 years of experience regulating drilling. If this is indeed true where is the summation of this information as to what has been learned and what more needs to be learned. If you are going to try to impress people with your credentials then at least tell them what you have learned.

3) On page 8, it states, "NES petroleum supply and demand measures will substantially reduce dependence on insecure supplies of energy". This claim needs to be defined quantitatively. What percent of oil imports will drop from our existing import situation as a result of this program and the OCS program? If this enough to really matter?

In addition the NES has never had an EIS done yet it is a major federal action significantly affecting the quality of the human environment. If such a study has been done it has been hidden from the public because the Club, which has received copies of the NES hearings has never been contacted by DOE about it. All reasonable alternatives have not been looked at as required by CEQ regulations for the NES or this OCS DEIS.

4) On page 17, MMS makes a big deal about its so-called comparative analysis of energy alternatives, hidden in Appendix C of the two volume DEIS. But such an analysis, no matter how good or bad, cannot take the place of looking in detail at all reasonable alternatives as required by law. MMS refuses to do this although the Club and others have requested this not just for this DEIS but for the last 5 yr. program as well. Please see our comments of May 6, 1986 for the last 5 yr. lease program to serve as an example of how MMS refuses to respond to requests in comments.

5) On page 18, MMS does not mention that sea litter, due to OCS activities as an impact that is constant and which effects tourism and recreation.

6) On page 18, since natural variations can be large then MMS cannot determine that impacts due to OCS will not hurt fisheries as it has in this DEIS. The percentage of natural variation is large enough to hide considerable damage from the OCS before this damage would ever be noticed. In addition some damage, like loss of wetlands and other important habitats, can be correlated with loss of fisheries. But MMS does not attempt to do this.

7) On pages 21-24, MMS uses phytoplankton as its barometer to productivity, and in so doing certainly redefines that word. Although there is talk throughout this document of looking at other species MMS refuses to give the entire realm of marine productivity its due. At the very least MMS must list other groups of organisms and give what comparisons it can between different areas with the lack of data caveat for the decisionmaker. This would at least give what little information we have to the decisionmaker to help in decisions. But the very idea of comparing planning areas with respect to productivity makes no sense. We are referring to very different habitats and geographical regions. You cannot compare apples with oranges and get any meaningful comparison.

The way MMS uses relative environmental sensitivity also simplifies and ridicules a complex subject. By only looking at the impacts of oil on the planning areas MMS ignores all the other damages that occur due to OCS activities, directly and indirectly. For instance loss of wetlands due to canals for pipelines, or air pollution fallout impacts (MMS has zero data on this) or impacts due to dredging, or drilling muds, produced waters, and other discharges are all ignored. Therefore MMS cannot tell us what the relative sensitivity of each different environment is. MMS does tremendous disservice to decisionmakers by ignoring what the real impacts are from this sale proposal.

8) MMS's assertion on page 27 that there will be, "No substantive reductions in onshore air quality should result from implementing the Proposed Program.", cannot be determined from the data MMS has available to it. MMS refuses to do the data gathering and correct modeling that is needed for an accurate portrayal of air pollution impacts from all OCS activities, both direct and indirect.

For instance, although the most important NAAQS pollutant along the coast regarding violations and threats to human health and welfare is ozone, MMS has zero monitoring data for this pollutant and zero modeling data for this pollutant using an accurate model. In fact the Offshore and Coastal Dispersion Model is not even apparently capable of measuring for ozone. Only VOC and NOX and CO and SO2 are modeled, separately. The combined impact of all air pollutants from direct and indirect OCS activities is ignored. Even a 0.01-0.03ppm increase in ozone levels in some of the coastal areas can cause levels of ozone that are above the health based standard of 0.12ppm and thus damage people's health and welfare. MMS seems to have no idea of what substantive means with respect to air pollution.

Even the MMS proposed Northwestern Gulf of Mexico Air Quality Study, reported on in pages 150-153 of the FY 1992 GOM ESP, is insufficent. The proposal talks about a screening model. We do not need to screen, we need a high quality urban airshed modeling exercise. Collecting one year of air monitoring data will not in any way collect enough information to reliably tell what the air quality of an area is. Natural variation of meteorological parameters makes it imperative that 5 years worth of data be gathered. In addition, since compliance with the ozone standard requires a three year look at information (the fourth highest ozone exceedence) gathering one year's worth of data will not do. In addition the urban airshed mdoel is notorious for needing lots of air quality data which means lots of air quality monitoring sites. MMS needs alot of information about fugitive and stack emissions from all OCS activities, direct and indirect. This will take considerably longer than one year to gather if done right.

To state, as MMS does, on page 161 of the Decision Documents, that "ozone modeling or monitoring may be necessary within the next 10 years" is a disgrace. Where is MMS's desire to know about impacts? What will be the impacts of pollutant fallout on the living microlayer on top of the water that is so important for ensuring that planktonic larve survive to replenish populations of marine life? Ten years is too late to start doing something. It is obvious that MMS cannot tell anything about air quality because it has not done the research that should have been done 10 years ago. In fact personnel at the MMS GOM Region attempted on several occasions to get air quality research funded but the RTWG disagreed.

On page 180 MMS needs to be more specific about its research into emission control technology and when baseline data collection really will be done. What specifically in the TA&R program will focus on air emissions control?

On page III-9, of the DEIS, if there is no measurement of pollutant concentrations then why can MMS say, "there is no reason to think that degradation of air quality exists over the Gulf waters.". This makes no sense. If there is no data for impacts due to OCS activities, direct and indirect, on Gulf air over water and onshore how can MMS be so sure that no degradation is occurring. This is biased thinking and it will be no surprise if MMS finds no problem since it has already convinced itself that one does not exist. Further, this is in direct contradiction to page IV.A-6, which says, "If projected emissions from an OCS facility, except a temporary one, significantly affect onshore air quality". Why should temporary emissions be exempt? They too can harm human health even though temporary.

MMS goes further in showing how ignorant it is when it states on page IV.D-35 that, "Cases of air quality nonattainment along the coastal areas of the GOM are not numerous." Since the entire Houston-Galveston area is in a nonattainment area (Harris, Fort Bend, Brazoria, Montogomery, Chambers, Liberty, Galveston, and Waller Counties), and since most of these have had ozone exceedences, and since MMS tries to dilute the impact of poor air quality by ignoring the counties that are not coastal but are nonattainment and right next to coastal counties, and since MMS on page IV.D-38 uses figures for total ozone exceedences that are wrong for the area (the City of Houston alone, which is in a coastal county, Harris, in 1990 exceeded the ozone standard 35 times at ~~one of~~ its 6 air monitoring stations, not counting any additional exceedences TACB stations had), it is not any wonder that MMS sees no air quality problem from OCS activities, both direct and indirect, and in general. The Houston area has some of the nation's worst ozone pollution but reading MMS information you would think there's not much of a problem.

MMS also seems to underestimate air pollution from facilities. On page IV.D-19, MMS says that the proposal has a 45 year life but uses this figure to divide the amount of air pollution that will be created from platforms that have only a 20 year life span (see page IV.D-36). Further, on page IV.D-37, state emissions from drilling facilities are not mentioned and do not appear to be in the calculations used throughout this entire document. Also the 15% figure used for oil produced from the OCS and refined at Texas and Louisiana refineries must be used as part of your air pollution production figures. That is 15% of a refinery's total pollution should be attributed to OCS production as well as the pollution generated by 15% of the product transported and used.

To make the assertion on pageIV.D-37 that offloading emissions are negligible from OCS activities is preposterous. You even use a Louisiana source, no data just a personal communication, to verify that Texas has no pollution problems from this source. In 1982 offloading of oil and similar liquids produced 8,000 tons/yr. of emissions in Harris County. Fifteen percent of this would be 1200 tons/yr., no small source of emissions. The fact is MMS needs not to guess and get real data before it makes assertions that are not backed up by facts.

On page IV.D-37, it is not the reclassification of air quality status that is the prime concern regarding OCS activity impacts, both direct and indirect. This is not a likely scenario. The problem is contributing enough emissions, via VOC and NOx precursors, that ozone levels that ordinarily would be under the standard would go over the standard or that already over the standard ozone levels would be pushed even higher. So that an increase in frequency and concentration might occur. This is what MMS needs to look at. In addition MMS needs to stop using terms like inert pollutants. Most of the pollutants that MMS looks at (ozone, nitrogen oxides, sulfer dioxide, and volatile organic compounds) are anything but inert. They are indeed reactive and are part of what is often called photochemical smog. They are photochemical because they are reactive in sunlight. They are not by any stretch of the imagination inert.

9) On page 29 of the Summary and Decision Document, we do not consider "as little as 6 years", to be a short time for recovery. In addition the phrase "no substantive environmental impacts" has not been defined. In reality we know so little about the impacts of oil in real life situations that this statement cannot be made. No one ever looks at phytoplankton and zooplankton and other losses and then tries to determine what that means with respect to loss of food resources for the rest of the food chain.

10) On page 29, wealth does not generate leisure for most people. It has been the need for social change and to protect human physical, mental, and emotional health that caused the movement to create leisure. It is our right and not something that simply comes from making more money. How many people do each of us know that are wealthy but are workaholics. Wealth does not in and of itself generate leisure.

11) On page 46, MMS needs to define minimal effect.

Comments on the Decision Documents

1) On page 4 it states, "This is followed by sale of the leases, exploration, development and production, and ultimately sale of the recovered minerals. The five step process is pyramidic in structure, proceeding from broad-based planning to an increasingly narrower focus as actual development grows more imminent. Additional study and consideration is required before each succeeding step is taken." What MMS does not say is that the public is essentially sealed off from the after lease sale process because there is no formal mechanism to alert and solict from the public its views on exploration, development, and production. This needs to be changed. Otherwise MMS's supposed desire to increase public input is simply a sham.

2) On page 6 it states, "that the OCS program decision must balance, to the maximum practicable extent, the potential damage, etc.". How is this done? Why does not MMS protect the topo highs maximally while getting almost the same oil and gas?

3) On page 8, the cost-benefit analysis does not take into account the real costs of natural resources. MMS does not give this the in depth look it needs. In addition it is important to note that the marketis working with respect to oil and gas costs. Since it costs more to drill for oil and gas in the U.S. and since prospects are not as good we are losing the industry to overseas where the costs are less and the prospects of finding oil and gas are greater.

4) On page 9, although MMS talks about a national energy policy with more enrgy efficient vehicles the reality is otherwise. Please see the enclosure which documents that for the sixth consecutive year fuel efficiency from cars has had little or no reduction. Since 1987 average miles per gallon has stagnated with 28.1mph in 1987, 28.6mph in 1988, 28.1mph in 1989, and 27.8mph in 1990. We are getting worse not better and this is due to the Reagan and Bush administration's policy to fight against better fuel efficiency even though it can be done (look at Japanese cars).

5) On page 9, there can be no environmentally sensitive production at ANWR and still keep the area a wilderness. Wilderness and oil production or any kind of development are contradictory.

6) On page 9, MMS says, "smaller, possibly less safe cars". Please document this assertion. You are attempting to undermine the support you said ~~said~~ you had for better fuel efficiency earlier. Smaller cars are not necessarily less safe any more than larger cars have to necessarily be fuel guzzlers. That larger cars are fuel guzzlers is the choice of American manufacturers not technology or engineering facts. In addition MMS needs to face, headon, the drain America first policy that it is advocating. What happens when we use up most of our oil, still need it, and other countries raise the prices at will and we have not converted over to other alternatives. MMS never faces this critical issue.

7) On page 19 MMS says, "As a result, most of the available low-cost conservation improvements consumers had overlooked are already being made or are likely to be in the year 2000 baseline." MMS needs to provide hard data to support this supposition. In fact if MMS will look at the facts the opposite it true. Although there are alot of simple things left to do regarding conservation, people are not encouraged to do them anymore because the government says you don't have to, MMS you are a case in point, or because incentives to do conservation and alternative energy sources have been reduced or taken away while incentives to drill for more oil have increased. Why do you not talk to Amory Lovins and let him provide you with specific information about low-cost conservation that is not being done by most people but which could be installed simply? Again, on page 19 you say, "Although some opportunities may still exist for additional energy conservation". A negative approach which makes the public think, incorrectly that conservation has about run its course. Please see the attached information from the Safe Energy Communication Council and respond to it regarding the cheapness and ease of energy conservation.

8) On page 25, MMS again tells only a half truth. It says that from 1971 to 1988 900 barrels were spills from blowouts. MMS calls this OCS operations. However operations include alot more than simply whether a rig has a blowout. In the Accidents Associated With Oil and Gas Operations, MMS document, it shows on Table 1 (enclosed), that in 1981, for instance 5,100 barrels of crude oil and condensate were spilled due to OCS activities. MMS needs to come clean and show spill figures for all OCS activities, direct and indirect and not try to hide behind figures that tell only half the truth. Another MMS document entitled, Oil and Gas Program: Cumulative Effects, also gives similar figures (also enclosed).

9) On page 42, how does the Secretary of the Interior weigh the qualitative and quantitative analysis of environmental impacts versus economic benefits? This is never explained.

10) On page 45, by using artificially high estimates for the price of a barrel of oil MMS justifies the proposal it is backing. You need to use the current market price or an average of the past five year's market price. Otherwise you assume high market price when reality says this will not occur.

11) On page 47, MMS says, "equivalent value of the wetland function to the ecological system". How is this measured when we do not know what this is in many cases? There is very little real study which could lead one to the conclusion that humans know how to restore or create wetlands well enough to where we know what the functions are and what they are worth to both the ecological and economic systems.

12) On page 49, how accurate have conditional resource estimates been in the past? In addition how accurate is the general purpose environmental cost model? What is the percent accuracy for this model's estimates? What is the cost of continuing to relie on oil instead of changing to other sources and ensuring that our national security is protected?

13) On page 78, what is the Southern GOM? Where is the Western GOM?

14) On page 98, what does substantially dependent mean?

15) On page 103, MMS says, "The President also elaborated on a number of the considerations specified in section 18 including the importance of: ... protecting certain areas off our coasts with unique natural resources, where even the small risks posed by oil and gas development may be too great". If this is true then MMS must protect the topo highs by making surrounding blocks offlimits to drilling to protect them from oil spills.

16) On page 135, please note that MMS says, "Option 6, the exclusion of sensitive biological features, is estimated to have ~~a~~ minimal effect on the proposed leasing program.", and on page 136, "Option 6, the exclusion of sensitive biological features, is estimated to have a minimal effects on risked NSV and the proposed leasing program.". If this is so then why does MMS say, on page 143 that, "The entire GOM OCS will be open for study regardless of any specific area's status on a proposed lease sal~~k~~e schedule"? Taking into account 15) above, and the quotations in this paragraph is it any wonder that the Sierra Club does not trust MMS to protect the FG and topo highs. Everything that can be will be leased or attempted to be leased no matter what in the GOM. This is not a balancing act.

17) On page 178, please describe how many civil penalties were successfully prosecuted by MMS and what the total amount collected was. MMS knows that its civil penalties power is very weak. This is something that the Sierra Club feels that MMS needs to strengthen even if it requires getting additional Congressional approval.

18) On page 179, MMS says, "MMS administers a comprehensive oil spill technology research program ... Current research projects are focusing on ... remote sensing and equipment testing and evaluation.". Apparently the GOM Region of MMS is not aware of this. In response to a letter we sent (copy of MMS response enclosed) we were told, "Research on oil spill prevention and clean-up technologies, for example, are more properly supported by private industry or the Federal Agencies responsible for oil spill response." Please explain this apparent discrepency.

19) Concerning appendix 8, the value of lost oil is not an environmental cost. It is an economic cost. An environmental cost would be the damage caused by oil moving into a marsh and what it would cost to restore the marsh and replace the~~y~~ values lost during the recovery time, assuming the area can come back as before (plus monitoring costs).

In addition, on page 8-111, the actual costs for GOM pollution control are shown as being not known here. We are concerned about this apparent oversight with respect to the Central and West~~h~~ern GOM.

20) On page 10-C-43 and 44, define "not have significant, large-scale negative impacts". In addition on page 10-C-56, when you say that past EIS's "indicate that OCS impacts are less than DOI significance levels" you do not say that these analyses have been flawed. They are flawed because they do not measure ozone and the real health and welfare effects it can have. In addition you have no data for the GOM so you are simply guessing. You do not know. Please see elsewhere in these comments where we address air quality problems with MMS analyses.

Comments on the Environmental Impact Statement

1) Where applicable, all comments up to this point in this letter must be used by MMS as part of our comments on the DEIS.

2) On page II-1, with respect to the alternatives, we support alternative VI, for the Central and Western GOM. Regarding other alternatives we feel they must be assessed and where feasible combined with alternative VI

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where this does not conflict. For instance alternative 1 conflicts with alternative VI so it is not compatible. But parts of alternatives II, III, IV, and V can be found to be compatible and should be integrated into one environmentally protecttive alternative. In addition alternative energy alternatives which look at 20%, 40%, 60%, and 80% less drilling and a mix of energy conservation and alternative energy sources must be looked at. We request that MMS do a new DEIS which includes all of the above in it.

3) On page II-4, since there will be more deep gas drilling and since MMS has found more marine mammals in the GOM than it ever thought exist we believe that the "no discernible decline" statement cannot be justified.

4) On page II-11, Impacts on Seafloor Habitats, since the GOM Region of MMS feels that scattered groups or individuals of chemosynthetic organisms are less important and can be sacrificed we believe that the "little or no damage" assessment that you make is wrong. In addition MMS does not know where all the chemo. are. Further, MMS cannot say that it will take less than two years to recover from drilling for chemo. communities when there is absolutely no data available which can tell how chemo. communities will respond to such environmental degradation. Where did MMS get its crystal ball?

5) On page II-12, we disagree that the marine recreational fishing will probably continue its growth and expansion. The public hearing~~s~~ we have attended regarding GOMFMC reductions in catch regulations, the articles and books we have read, and the people we have talked to lead us to the opposite conclusion. It is getting more expansive to fish and party boat operators are having a hard time making it. In addition many fishers feel that with so many fish species restricted (mackeral, redfish, red snapper, grouper, spotted weakfish, etc.) that it is not worth fishing anymore because what they can take home is insufficient for an incentive to keep bearing the cost of fishing.

6) On page II-23, we disagree very strongly that alternative VI only offers the same low level of impact protect to topo highs as alternative I. In fact if MMS reads it own GOM Regional EIS's it will find that the extra protection that alternative VI provides for blowouts cannot be duplicated by alternative I. We request in the response to these comments that MMS explain this apparent contradiction. MMS here is obviously trying to make the favored proposal, alternative I, look better so that it will not be under pressure to adopt alternative VI. This again is a case of the whole truth not being spoken by MMS.

7) On page IV.A-27, since no real research has been done on the human health dangers of radionucleides from produced water discharges MMS cannot say that "there seems to be no apparent human health or environmental contamination problem". In fact the information by St. Pe indicates that eating oysters with the levels of radiation that are found in the experiment he did would be above certain safety levels. MMS needs to do its homework on this and not try to act as if it knows information when it has no factual information to back-up its assertions of nonharm.

8) On page IV.A-29, the comment that, "beyond the lack of obvious effects in historical producing areas such as the GOM", is again a case of

MMS not telling the whole truth. We again, have little information on long term effects so to make this statement makes no sense. Not only that but few have looked for such effects. There were some indications of impacts in the Buccaneer study but this study was hardly comprehensive and complete on its own. The lack of data does not mean that there are no impacts. Yet that is exactly what MMS is saying and this is wrong and misleading to the public.

9) On page IV.D-12, MMS should be honest and show the total number of oil spills from all OCS activities, direct and indirect. The idea that only large spills show the potential for having a large spill has no factual backing data. At least MMS does not present it. The fact that any size spill occurs is significant since it notes a problem with operation and since even small spills, if not handled correctly, may lead to larger spills or conditions that can lead to larger spills. All spills added up together give you the potential in % of the risk of having a spill.

Since the historical data MMS presents on page IV.D-15 shows that there were an average of 914 spills each year from 1976-1985 (known spills we might add) any attempt by MMS to try to play down spill potential is ridiculous. We might add that attempts to estimate spills in themselves bring alot of inaccuracy into the statistics as well as all the spills that occur that noone knows about or that someone sees and reports but cannot attribute a cause.

10) On page IV.D-22, MMS must define mixing zone in area and also "immediate vicintiy of the discharge source". What do these mean and how large are they? On this same page MMS must realize that IMCO is a drilling mud company and has a vested interest to develop data which shows that drilling muds are not toxic.

11) On page IV.D-23, the monitoring studies that MMS touts were poorly designed. They cannot tell natural variation impacts from those caused by humans. In addition when MMS says, "No effects are anticipated to water uses from routine activities and discharges" this is incorrect since these discharges will degrade water quality to some extent and some marine life (phytoplankton and zooplankton) will be killed by the discharge. Very few things in life have "no effects".

12) On page IV.D-111, regarding helicopter and airplane impacts there is noone to enforce the ceilings that MMS refers. We have seen helicopters buzz beaches and go low over Matagorda Island where the Whooping Cranes and Piping Plovers exist. We disagree very strongly with your "will not affect" assessment here.

13) On page IV.D-175, we believe that MMS is wrong when it says that "these strandings tend to be either hatchlings or yearlings". The data we have seen indicate that most strandings are adults. Please document your source here.

13) On page IV.D-197, we do not believe that the GOM bottom is as lacking in diversity as MMS indicates. Enclosed is an article about deep-sea biodiversity in the benthic layer which indicates that such biodiversity has been understated due to a lack of good enough sampling equipment in the past. The same types of sampling need to be done for the GOM to see what its diversity really is. In addition on page IV.D-198 MMS does not look at the cumulative impact on the GOM bottom due to past present, and future discharges and disturbances of the bottom due to all GOM activities, direct and indirect. Your cumulative impact assessment does not look at this either.

15) On page IV.D-198, MMS has no documentation that an oil spill will not impact chemosynthetic communities and that other discharges will not harm them. There have been no studies done to prove this one way or the other. One thing is true, the concentration of oil from a spill would be much greater than the oil that seeps out where these communities grow. Whether they could take a higher concentration is not known. In addition on page IV.D-199 we know so little about chemosynthetic communities that MMS has no information on which to base a claim that destruction of some of these will not result in major impacts to the ecosystem. We do not know if or how nearby colonies could repopulate impacted areas. There is no information to show that scattered chemosynthetic communities are less important than the denser communities. That is simply our supposition not based on any scientific studies. In fact the scattered communities may be more valuable if they are colonizers of new areas and thus spreading the community over a larger area and making it more adaptable and less susceptible to being wiped out in a single disasterous event.

16) On pages IV.D-200-202, we disagree that the effectiveness of shunting to protect topo highs has been proven. The monitoring programs all have had many flaws in them (see our comments and attachments for the draft proposal). Also MMS is strangly silent here about working to lessen the protection for the Flower Gardens by doing research that supposedly will show that the one mile protection zone and stipulations are not needed.

In addition we believe there is no proof that all oil will be swept around the banks in case of a spill. Since oil is lighter than water it is very possible that floating toward the surface oil will be caught in the coral reef's interstices.

Further there is no data that we have seen that supports MMS assertion on page IV.D-202 that recovery from a blowout will take 2-4 weeks. This is speculation based on wishful thinking. Again MMS is silent about working to reduce protection for the FG so that if a blowout does occur there will be a greater possibility of damage. MMS also does not mention the possibility of a pipeline leak and the pipeline that MMS is thinking about allowing to go between the East and West Flower Gardens (a National Marine Sanctuary to boot, is nothing sacred from your lust for oil).

17) On page IV.D-604, MMS again continues to talk about how its stipulations have protected the FG. But again you remain silent about former Sec. Watt allowing the lease of blocks directly over these reefs. Also the assertion on page IV.D-607 of alternative I's impacts on topo highs is much greater than the impacts that alternative VI would have as explained on page IV.D-898, "The impact of the selection of this alternative is expected to result in essentially no impact to the sensitive offshore habitats of the topographical features.". This is a much lesser impact than alternative I would have, unlike what MMS intimated earlier in this document (see comment 6).

Because of the problems we have indicated we request that MMS redo this entire proposal and EIS and put out a new DEIS.

Brandt Mannchen

Sincerely, Brandt Mannchen, Sierra Club, 627 Euclid, Houston, Texas 77009

COASTAL COMMITTEE, LONE STAR CHAPTER SIERRA CLUB

F. Hermann Rudenberg, Ph.D.
3327 Avenue Q 1/2
Galveston, Texas 77550
October 21, 1991

Director, Minerals Management Service
381 Elden Street, Mail Stop 4320
Herndon, Virginia 22070-4817
Attention: Debra Purvis

Folks:

These comments pertain to the Comprehensive Program Draft EIS.

I have just been asked to respond to a legislative initiative by Senator Phil Gramm of Texas to improve the EPA activities in the Gulf of Mexico in a direction similar to the efforts being shown for the Great Lakes and Chesapeake Bay. None of the proposed 5-year program alternatives would fit with this proposal to improve the productivity of the Gulf of Mexico. All the alternatives are too narrow.

I favor an alternative which provides protection for ALL biologically sensitive areas. NOW. I note that the Corps of Engineers has permitted a pipeline by Texaco to run between the East and West Flower Garden Banks. That is an insult. It places these sensitive areas at tremendous risk. It shows a defect in the MMS's concerns in their EISs. Because of the presence of water currents, I suggest at least a 4-mile no activity zone around each biologically sensitive area, to include all continental shelf reefs and the Florida Middle Ground.

Alternative 6 makes an approach to this. But you must go further. You must provide incentive-trade-offs so that existing leases within this 4-mile zone are phased out within a reasonable time (no more than 10 years, and preferably much sooner). The risk element from placing drilling sites or pipelines so close to biologically sensitive areas defies logic. And you have never addressed the aging of pipelines!

Alternative 5 also has some valid restrictions. There are areas where drilling just should not take place. These include near offshore areas and other areas which are nursery areas for marine species.

The rate of leasing should be constrained. Multiple sales just increase the costs to the federal government. In a 5-year program there need be no more than 2 sale attempts for any lease block. Not all blocks need be available at all times. Protection of the biological environment has not been adequate in the past. Suggestions provided by the public have been routinely ignored, and that must stop. The Government serves the people; it is not designed to promote the hydrocarbon industry at least cost. And the present philosophy of the MMS does not seem to entertain

concern for the biological environment. This must change. Now. The recent Draft EIS for lease sales 131, 135, and 137 provides clear statements of the risks, and yet these are not adjusted to by the MMS. They must be adjusted to.

And it is not a matter of "balance" between environment and industry. That balance is required by NEPA, yet has not occurred in the past 20 years. Clearly our concept of balance is for naught. This is shown in ever so many ways: The Great Lakes initiative, the Chesapeake Bay initiative, The establishment of Marine Sanctuaries, of Bay Preservation Studies and Sanctuaries, State Coastal Zone advisory committees which include broad representation, and the continued ads by industry professing their environmental sensitivity. Slowly things are turning around...perhaps. You must contribute to the turn-around before it is too late. And that will mean being hard-nosed about protective means, in spite of industry pressure.

I trust that you will be alert not only to Minerals Management but also to Marine Life Management. Dr. Bright has stated that it takes 400 years for a damaged coral reef to recover the damage. Should that be risked? I vote no.

Thank you for this opportunity to comment.

Sincerely,

F Hermann Rudenberg

F. Hermann Rudenberg, Ph.D.
Member, Coastal Committee
Lone Star Chapter Sierra Club

In summary: Slow the pace of leasing (Alternative III)
+Exclude certain planning areas (Alt. IV)
+Exclude certain coastal areas (Alt V)
+Exclude certain sea-floor features (Alt VI)
=Alternative "new VII"

Each is too narrow - Combine them

COMMENTS
of the
SIERRA CLUB

To MINERALS MANAGEMENT SERVICE
on the
COMPREHENSIVE OUTER CONTINENTAL SHELF
PROGRAM PROPOSAL FOR 1992-1997

DRAFT ENVIRONMENTAL IMPACT STATEMENT

OCTOBER 26, 1991

Prepared by
Shirley Taylor, Chair
Sierra Club National Outer Continental Shelf Subcommittee
1414 Hilltop Drive, Tallahassee FL 32303

SIERRA CLUB COMMENTS ON DRAFT EIS

OUR POSITION Overall we support Alternative II, **No Action.** Even were Alternatives IV, V, and VI to be implemented with all their options, we still could not support the Proposed Alternative I leasing (as modified).

OUR RATIONALE for No Action is based on the following points:

1) New lease sales are not necessary in order to continue exploration and production of OCS oil and gas. At the close of FY 1990 there were nearly 7000 active Federal OCS leases totaling nearly 37 million OCS acres (MMS 1990 Annual Report to Congress). Clearly oil and gas exploration and production from these areas can continue well into the next century.

2) Wise stewardship of Federal resources requires that current rates of consumption of oil and gas begin to drop in this decade. We insist that hydrocarbon resources must be husbanded carefully beginning NOW, to ensure that basic supplies continue to be available for essential manufacturing processes into the centuries ahead.

3) Without policy changes now on hydrocarbon extraction and on energy source diversification, oil and gas consumption will continue and escalate wasting this important non-renewable resource.

4) A Comprehensive 5-year Energy Program (with long range planning for another decade and beyond) is what MMS and DOI should be presenting now, in 1991. Such a program would begin immediately begin to phase in strong conservation programs (with incentives), use of best alternative energy sources, and further research toward source diversification and cost reduction.

5) We recognize that this requires both Administrative willpower and cooperation of several Agencies, as well as Congressional and Public support. We are convinced that if enlightened leadership and progressive programing comes forth in the Administration, a cohesive coalition of Congressional and Public cooperation could be forged to turn the energy tide toward national welfare for the future.

6) The world oil market is full of risk and totally unpredictable in both price and availability, as we have seen in this past year. The best way the US can insulate against these problems is to move to other energy sources over which the US can have more control. Our economy will benefit to be free from the swift changes in our own oil prices which cannot be separated from the world market.

7) Another reason that it is essential to back out of oil beginning now is the fact that continuing to burn hydrocarbons in autos and for heating is precisely what we must move away from, in the interest of better air quality, and to decrease atmospheric carbon dioxide. The effects of global climate change- whether erratic weather or global warming- are too serious to ignore until it is here. When we really know , it would be too late to act to avoid this global change.

8) To the degree that we continue to import foreign oil for the next several years, we suggest serious consideration for the US develop an environmentally sound oil pact to buy from the Soviet Republics. Immediate advantages: the US could assist them to incorporate advanced, environmentally sound oil development practices, buying oil from the Soviets would provide hard currency they urgently need while filling our immediate need for oil.

SOME SPECIFIC COMMENTS

Photosynthesis The document should recognize (III-6) that in the Gulf of Mexico there are seagrass beds at depths of at least 100 meters.

Redfish We find no discussion of effect of oil on this fish that is now severely restricted (III-15).

Importance of Maintaining Diversity of Marine Organisms Recent marine chemistry research on the marine food chain shows it to be much more complex than that of terrestrial organisms. For instance among notable medical finds through studies of sponge and coral chemistry have been the antiviral drugs vidabarine and prostoglandin. The importance of maintaining healthy functional ecosystem diversity in the Gulf of Mexico, which is subject to so much stress from oil development and is receiving polluting inflow water, cannot be overemphasized. This diversity of organisms is essential for significant ongoing search by chemists to find distinctive new compounds that could prove valuable in biomedicine (Science, April 13, 1990 pp.173-7).

Pressure on Fish Populations The relationship between Gulf of Mexico oil development and increased Gulf fishing effort and catch is of extreme importance. A number of favored fish stocks are declining thru the combination of overfishing and loss of habitat. The analysis (III-37) relates increased 1980's fish landings to decreased Gulf oil jobs and to oil rig opportunities with increased fishing pressure, as well as claimed advantages associated with oil and gas structures. It is not acceptable to

tout increased oil activity so as to decrease fishing pressure. If indeed fishing pressures are increased by presence of oil and gas structures, this must be cooperatively evaluated by MMS and the Gulf Fishery Management Council responsible for protecting fish populations from decline.

Projections of Exploration and Development Wells For a reader to fully grasp the oil activity and associated impacts and risks to any region (IV-D3), this document should also note the total activity (proposed program activity plus ongoing activity or possible activity based on previous leasing).

Transportation Assumptions (IV-D10) It is helpful for analysis that this document has one listing that describes expected transport for each proposed field. Recognition of small spills is also an improvement. However incomplete reporting must be dealt with as now required by the Oil Pollution Control Act. Not only has this chronic spillage been a source of continuous pollution, but a waste of irreplaceable oil resources.

Spill expectation figures are not provided for barge transport, and must be included for complete spill probablilities.

Again, the document should remind the reader that these assumed spill tables are not an indication of total spill expectations, only spills associated with this proposed program.

Produced Waters, Drilling Muds We are very concerned about the discharge of produced waters (IV-D19) directly into surrounding offshore waters. The varying concentrations of chemicals and of radioactivity are of serious concern. The effect of direct discharge of produced waters and drilling muds depends on what cleanup technology is utilized- as well how effectively it is actually processed, or monitored. The cumulative impacts of discharged water for each producing well over several decades is not addressed- must be included here.

We do prefer that produced waters be piped ashore- but untreated disposal ashore is of extreme concern. The fact that RCRA has exempted drilling muds and produced waters from the hazardous category for disposal does not show they are harmless- rather that political influence excluded them from RCRA.

Air Quality See attached Program Comment, Appendix, for these comments.

Impact Predictions for Marine Mammals, Birds, Fish (IV-D--) We cannot accept your estmates of sublethal effects on "one generation" resulting in "no discernible decline in populations"; nor reductions for "2 generations (of 8-10 years)" resulting in "no changes espected". The fact that effects of oil spills may be sublethal does not speak to whether these creatures can still breed in the future. We disagree with this uniform comment of "no impact".

Chemosynthetic Communities These organisms with their unusual chemistry are only slightly known, and as you indicate they are recently discovered and studies of them are just beginning. It is vital that no communities be damaged or lost as exploration moves to these deeper waters. (IV-D 198-9) We cannot dismiss the disruptive activity proposed as acceptable.

Fresh Water We find no recognition in sections on Coastal Community Impacts (IV-D--) of offshore requirements for fresh water supplies, or of the degree of availablility from onshore supplies. This must be recognized and addressed.

Solid Waste (non-toxic) Recognition of the problem of solid waste going into offshore waters, whether intentionally or not, is a very serious problem. It violates Marpol regulations, is a large source of beach litter as now documented from biennial beach cleanups. We have repeatedly brought this to the attention of MMS in previous comments. It cannot continue to be ignored.

And analysis is also missing of the availability of land disposal sites for solid waste brought ashore. Legal land fills are being closed and their use is being restricted in many states to lengthen their expected life span. This must be included in document analysis.

Impact of Energy Conservation In MMS impact analysis we fail to find an important pocketbook result missing- for all uses of CAFE standard vehicles, for all house or building budgets, lower fuel requirements immediately produce lower cost fuel bills.

Index VIII Useful references, but we could wish for some additional topics to be referenced here.

Appendix Information presented in these sections is considerably more easily located and of more substance than in earlier documents.

The Energy section is a new presentation by MMS. The Oil Spill Response Section is extremely helpful as a general information source. We are concerned over the degree to which the very much stronger requirements will indeed be inforced. The assumption expressed in the EIS that facilities will be available onshore to receive bilge washings etc. may be too optimistic.

NOTE- Please refer to highlighted sections of Program Comments attached here for additional topical comments and include with these DEIS Comments.

Shirley Taylor, Ph.D.
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904-385-7862

COMMENTS
of the
SIERRA CLUB

To MINERALS MANAGEMENT SERVICE
on the
COMPREHENSIVE OUTER CONTINENTAL SHELF
PROGRAM PROPOSAL FOR 1992-1997

OCTOBER 25, 1991

Prepared by
Shirley Taylor, Chair
Sierra Club National Outer Continental Shelf Subcommittee
1414 Hilltop Drive, Tallahassee FL 32303

Sierra Club Comment on SID

Improvements Noted

We recognize some general Program improvements that move toward: (1) reduced number of sales scheduled, (2) some reduction of number of planning areas targeted for leasing, (3) inclusion of an option to reduce size of some planning areas, and (4) option to exclude a few special areas from leasing during this period.

In addition the program does include (1) a new catalogue of energy alternatives (2) inclusion of some more current data, and (3) some effort to begin estimating net social costs for cost/benefit analyses (although externality cost inclusion is inadequate).

We continue to support the MMS program incorporation of President Bush's year-2000 deferral areas .....BUT-

What Credibility Has This Proposed Program ?

We are shocked that at the same time this Bush 5-year plan incorporates the year-2000 deferrals, the President is now also supporting Senate Bill 1220 which would open up the entire OCS -including his own deferrals- for leasing recommendations to be transmitted to Congress within 6 months.

These contradictory positions bring into question the validity of the 5-year Program Proposal to which these comments are directed. What is the Public to conclude about the real administration agenda for the Outer Continental Shelf ? How valid is this Proposed Program on which we are all concentrating?

Basic Flaw

The 1992-97 Program as presented is fatally flawed by being based on the impossibly weak and erring "National Energy Strategy". The US requires a forward-looking OCS leasing proposal that is designed to reduce our dependence on oil through a skillfully crafted program or conservation, energy efficiency, and development of renewable energy sources and environmentally safe alternative fuels. Instead this Program continues to emphasize oil development of the OCS and the Arctic National Wildlife Refuge instead of environmentally sound conservative use of this country's energy resources, through investing in cost-effective energy-efficiency programs and renewable resource programs beginning now.

To be adequate this Program must include an alternative to meet US energy requirements yearly with a stepwise phase-down of oil leasing and a phase-in yearly of specific energy source alternatives and conservation, coupled with yearly target goals for ongoing energy reasearch. After all, a joint MMS-DOI endeavor of this sort should be very reasonable to accomplish with the Administration directing this effort.

In short, this is an outdated program proposal- long on oil and short on conservation. To move intelligently toward the next century the US must immediately undertake a 5-year Program that is progressively Longer on Conservation and Shorter on Oil.

Inadequate MMS Public Involvement and Information

The one improvement now evident regarding MMS public outreach is the 90-day comment period provided for this EIS and Proposed Program- good.

However there are serious performance omissions in MMS public outreach. MMS goals for all Scoping Sessions, Lease Sale and Program Hearings are not adequately explained beforehand to the public at large. Basic meeting notices are insufficient. And MMS schedules too few sessions and hearings, which prevents sufficient contact for the concerned public. Finally it is counter-productive to schedule these meetings only during work hours, as was the Sept. New Orleans hearing on this Proposed Program. It prevented our representative from testifying.

In addition to improving federal MMS public outreach, we urge MMS to set minimum public participation standards to be met by all MMS regions. For example Information Transfer meetings for exchange at a technical level should be supplemented by Regional MMS circulation to their wider public of selected informative news reports and articles on the new OCS information presented, suitably written for nonscientist readers who are intelligent but not informed on the topics.

MMS should also examine the structure of RTWG's in all regions- their interest balance in membership, adequacy of their notification to public of RTWG meetings and agenda, degree to which they provide in their meetings for public comment. MMS should foster use of the RTWG as a formalized pathway to establish meaningful and ongoing contact with environmental groups in addition to state and agency reps and industry.as at present. RTWG can be a useful vehicle for discussing environmental studies, informing about current activities and problems, and fostering a cooperative spirit in problem-solving. Currently for environmental organizations there tends to be more controversy than cooperation, but this could be improved by taking the involvement actions described.

(Point of Information: Sierra Club has been able to develop a very useful working relationship with Pacific RTWG and has an environmental representative as member there. In the Gulf Region in spite of a year of effort, we have been unable to establish a similar relationship. In fact there is no environmental representative RTWG member through whom we can relate to this body. There are vacant membership slots on their roster, and industry and business have multiple representation.)

Specific Topic Comments

Energy Analysis In addition to our objections (above) to the energy rationale on which this Program is based, we recognize the addition of the appendix recitation of possible energy sources and impacts. This is a useful first step. We must point out however that nearly all listed alternatives are dismissed without comparisons of externality impacts expressed, or cost of each alternative in comparison with oil and its total of externalities. We recognize that complete comparisons are difficult, but the document's comparison of prices to be expected is only partial information.

Omitted is clarification for each alternative of its appropriate role(s) in what region, and for what market (centralized or dispersed).

Most important overall analysis that must be provided and is missing: detailed interpretation of cumulative effects of utilization of a series of most promising alternatives, and utilization of such a combination to supplement BackOut from oil. This would alter Program's assumption that BackOut would rely on oil imports. Instead there must be an alternative of Backout that relies on conservation and alternatives.

Planning Areas and Sale Areas We urge more restricted sale area size including the Gulf of Mexico sales. Our rationale is that to adequately analyze available data and probable impacts there must be a smaller sector, not area wide sales.

With regard to buffers (pages 122-132) we propose that establishing a 100 mile buffer for ALL SALES, ideally as part of this Program, would go a very long way to improve the federal public image. It would certainly begin to reduce public antagonism to MMS program in the Gulf of Mexico, off North Carolina, off the Pacific coast. In addition it would also improve protection for the shore and its resources from development activities, any pollution. The few specific exclusion areas and buffers offered in program alternatives are a beginning for what should be a number of additional area exclusions and buffers.

Again, if all areas of the OCS now deferred till 2000 are made open season for leasing by Congress, our Area comments will be extensive.

On Time Schedule We strongly recommend a minimum of 120 days for consistency determination (page 122).

Environmental Costs It is not practical to enumerate the many uncertainties and implications from the Program efforts to quantify environmental risk, measure sensitivity, and to compare with productivity ratings for eventual cost /benefit analysis. Our general view is that it is questionable whether any totally inclusive analysis is possible. We are positive that this analysis is incomplete and therefore its conclusions are unsupported.

The major omission that concerns us is that real effort is not demonstrated to calculate cumulative impacts- cumulative over years, cumulative of multiple impacts on originally renewable resources. In fact we see no calculations that recognize the evaluation (perhaps eternal) of renewable resources, which from economic point of view reguire prioritization.

Environmental Studies We find it wise for that the Program schedules studies in non-lease areas during the coming 5 years. We recognize that this may depend on Congressional appropriations, which may slow plan down. In any case results of appropriate studies must be available to utilize before any leasing takes place.

Air Analysis This is a sore point with us regarding especially the Gulf of Mexico. We find the Gulf Region modeling to be seriously flawed, based on inadequate and incorrect assumptions. Please refer to our Sierra Club Air Specialist's analysis and comments (Brandt Mannchen, Houston TX, Proposed Program Comments, pp. 8-10, of Oct. 20, 1991- attached here).

Phytoplankton Ratings We recognize that this is the general basis on which MMS is accustomed to compare areas. However it is at best a limited factor-somewhat like comparing human populations solely on the amount of their hair, and deducing therefrom some overall regional characterization. At the very least for the general document reader MMS must provide clarification that a region "low in plankton" does not signify an area low in marine life, or low in productivity. MMS cannot make region productivity comparisons with any meaning until "secondary" productivity (or some additional productivity measure is utilized.

Oil Spill Prevention/Planning/ Research We are very concerned over the inconsistency of the statements of the Gulf Region ("Research on oil spill prevention and clean-up technologies, for example, are more properly supported by private industry or the Federal Agencies responsible for oil spill response" as we were informed from the Gulf office, and Program document (p.179)," MMS administers a comprehensive oil spill technology research program...etc.). This is a critical matter, and MUST be adequately addressed in the Progam planned and for every lease sale. In fact oil spill contingency plans have been missing in most if not all Western Gulf sale documents, at least until now. This cannot be justified or tolerated.

Appendix 1 We find your failure to include a summary of Comments submitted by Brandt Mannchen (9 pages) to be extremely serious. It casts deep doubt in the public who know of this omission that there is reality to the MMS public participation process. In fact it substantiates what most of us have long feared - that public participation is too often a major exercise in futility.

Signed Shirley Taylor

Shirley Taylor, Ph.D.
Chair, Sierra Club National OCS Subcommittee
1414 Hilltop Drive., Tallahassee FL 32303
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ADDENDA- AIR QUALITY COMMENT DETAIL

By Brandt Mannchen
627 Euclid
Houston TX 77009

8) MMS's assertion on page 27 that there will be, "No substantive reductions in onshore air quality should result from implementing the Proposed Program.", cannot be determined from the data MMS has available to it. MMS refuses to do the data gathering and correct modeling that is needed for an accurate portrayal of air pollution impacts from all OCS activities, both direct and indirect.

For instance, although the most important NAAQS pollutant along the coast regarding violations and threats to human health and welfare is ozone, MMS has zero monitoring data for this pollutant and zero modeling data for this pollutant using an accurate model. In fact the Offshore and Coastal Dispersion Model is not even apparently capable of measuring for ozone. Only VOC and NOX and CO and SO2 are modeled, separately. The combined impact of all air pollutants from direct and indirect OCS activities is ignored. Even a 0.01-0.03ppm increase in ozone levels in some of the coastal areas can cause levels of ozone that are above the health based standard of 0.12ppm and thus damage people's health and welfare. MMS seems to have no idea of what substantive means with respect to air pollution.

Even the MMS proposed Northwestern Gulf of Mexico Air Quality Study, reported on in pages 150-153 of the FY 1992 GOM ESP, is insufficent. The proposal talks about a screening model. We do not need to screen, we need a high quality urban airshed modeling exercise. Collecting one year of air monitoring data will not in any way collect enough information to reliably

tell what the air quality of an area is. Natural variation of meteorological parameters makes it imperative that 5 years worth of data be gathered. In addition, since compliance with the ozone standard requires a three year look at information (the fourth highest ozone exceedence) gathering one year's worth of data will not do. In addition the urban airshed mdoel is notorious for needing lots of air quality data which means lots of air quality monitoring sites. MMS needs alot of information about fugitive and stack emissions from all OCS activities, direct and indirect. This will take considerably longer than one year to gather if done right.

To state, as MMS does, on page 161 of the Decision Documents, that "ozone modeling or monitoring may be necessary within the next 10 years" is a disgrace. Where is MMS's desire to know about impacts? What will be the impacts of pollutant fallout on the living microlayer on top of the water that is so important for ensuring that planktonic larve survive to replenish populations of marine life? Ten years is too late to start doing something. It is obvious that MMS cannot tell anything about air quality because it has not done the research that should have been done 10 years ago. In fact personnel at the MMS GOM Region attempted on several occasions to get air quality research funded but the RTWG disagreed.

On page 180 MMS needs to be more specific about its research into emission control technology and when baseline data collection really will be done. What specifically in the TA&R program will focus on air emissions control?

On page III-9, of the DEIS, if there is no measurement of pollutant concentrations then why can MMS say, "there is no reason to think that degradation of air quality exists over the Gulf waters.". This makes no sense. If there is no data for impacts due to OCS activities, direct and indirect, on Gulf air over water and onshore how can MMS be so sure that no degradation is occurring. This is biased thinking and it will be no surprise if MMS finds no problem since it has already convinced itself that one does not exist. Further, this is in direct contradiction to page IV.A-6, which says, "If projected emissions from an OCS facility, except a temporary one, significantly affect onshore air quality". Why should temporary emissions be exempt? They too can harm human health even though temporary.

MMS goes further in showing how ignorant it is when it states on page IV.D-35 that, "Cases of air quality nonattainment along the coastal areas of the GOM are not numerous." Since the entire Houston-Galveston area is in a nonattainment area (Harris, Fort Bend, Brazoria, Montogomery, Chambers, Liberty, Galveston, and Waller Counties), and since most of these have had ozone exceedences, and since MMS tries to dilute the impact of poor air quality by ignoring the counties that are not coastal but are nonattainment and right next to coastal counties, and since MMS on page IV.D-38 uses figures for total ozone exceedences that are wrong for the area (the City of Houston alone, which is in a coastal county, Harris, in 1990 exceeded the ozone standard 35 times at ~~one of~~ its 6 air monitoring stations, not counting any additional exceedences TACB stations had), it is not any wonder that MMS sees no air quality problem from OCS activities, both direct and indirect, and in general. The Houston area has some of the nation's worst ozone pollution but reading MMS information you would think there's not much of a problem.

MMS also seems to underestimate air pollution from facilities. On page IV.D-19, MMS says that the proposal has a 45 year life but uses this figure to divide the amount of air pollution that will be created from platforms that have only a 20 year life span (see page IV.D-36). Further, on page IV.D-37, state emissions from drilling facilities are not mentioned and do not appear to be in the calculations used throughout this entire document. Also the 15% figure used for oil produced from the OCS and refined at Texas and Louisiana refineries must be used as part of your air pollution production figures. That is 15% of a refinery's total pollution should be attributed to OCS production as well as the pollution generated by 15% of the product transported and used.

To make the assertion on pageIV.D-37 that offloading emissions are negligible from OCS activities is preposterous. You even use a Louisiana source, no data just a personal communication, to verify that Texas has no pollution problems from this source. In 1982 offloading of oil and similar liquids produced 8,000 tons/yr. of emissions in Harris County. Fifteen percent of this would be 1200 tons/yr., no small source of emissions. The fact is MMS needs not to guess and get real data before it makes assertions that are not backed up by facts.

On page IV.D-37, it is not the reclassification of air quality status that is the prime concern regarding OCS activity impacts, both direct and indirect. This is not a likely scenario. The problem is contributing enough emissions, via VOC and NOx precursors, that ozone levels that ordinarily would be under the standard would go over the standard or that already over the standard ozone levels would be pushed even higher. So that an increase in frequency and concentration might occur. This is what MMS needs to look at. In addition MMS needs to stop using terms like inert pollutants. Most of the pollutants that MMS looks at (ozone, nitrogen oxides, sulfer dioxide, and volatile organic compounds) are anything but inert. They are indeed reactive and are part of what is often called photochemical smog. They are photochemical because they are reactive in sunlight. They are not by any stretch of the imagination inert.

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10-20-91

Department of the Interior
Minerals Management Service
ATTN: Branch of Environmental Projects Coordination
381 Elden Street
Herndon, Virginia 22070-4817

Dear Sirs,

The following comments are addressed to the 1992-1997 Draft EIS.

1) We request a continuing moratorium on new leasing in the Gulf of Mexico and particularly in the Eastern Gulf since it has a very low potential for oil and a low potential for gas.

2) Fully enclosed rigs like those required in Alabama jurisdictional waters are requested for blocks 751-753, 797, 798, 841 and 842 adjacent to the Alabama-Florida line and all produced water, mud, and cuttings should be taken to approved land disposal sites. This area is too near the best beaches in Alabama and some of the best in Florida to take any chances with oil wastes.

3) We would like to know the status of the proposed 1990 Physical Oceanographic and Marine Ecosystems studies and would like copies if they are available. The GERG studies were inadequate and nothing seems to have been done about the baseline data and controls for the Eastern Gulf recommended by M.E. Bender

4) All drilling mud and cuttings should be shunted to bottom rather than dumped into the water column particularly at less than 300' depth in the very productive commercial and sportfishing area off the Mississippi, Alabama, and Florida coasts.

5) Produced water should be piped to shore from all federal lease blocks adjacent to Alabama blocks which already have pipelines in place and mud and cuttings from these near shore rigs should be disposed of on shore.

6) Available offset rigs and their response times should be identified in the drilling permits for wells into the known and potential very pressure zone Norphlet in Mobile Blocks 860, 861, and 862.

7) The Marine Pollution Control Act of 1987 is not working well and all rigs and service boats should be required to have outside contractor inspection and environmental personnel on them as a cost of drilling. This would give your inspectors some relief and the public will respond favorably even if the owners and drillers dont. Give clean up or don't work a try.

Thank you for your consideration.

Richard D. Radford

Gulf Coast Exploration Division
North & South America Exploration

Marathon Oil Company

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Houston, Texas 77253
Telephone 713/629-6600

October 17, 1991

NOV 22 4 26 PM '91
MINERALS MANAGEMENT SERVICE

Director
Minerals Management Service
U. S. Department of the Interior
Public Affairs Office
1849 C Street NW
Washington D. C. 20240

Gentlemen:

Re: **OCS Comprehensive Program**

Marathon Oil Company appreciates the opportunity to comment on the proposed July 12, 1991 Five Year OCS Leasing Program. The Department of Interior is to be commended for its efforts to implement a new long term approach to OCS Leasing. Like the Department of Interior, Marathon Oil Company shares your concerns regarding environmentally responsible operations on the Outer Continental Shelf.

In order to consider the implications of the new program, Marathon conducted a review of the 1987 Plan. By understanding the problems of the last plan better predictions of the new plan can be made.

1987 PROGRAM

The 1987 Program approved the consideration of 39 lease sales in 21 planning areas. Based on information published in the Minerals Management Sale Statistics Report, 14 sales have been held in 6 planning areas to date with one sale remaining in the Central Gulf scheduled for March 1992. Provided the last sale is held as scheduled, only 15 of the 39 sales in 6 of the 21 planning areas will be held or 38% of the sales in 29% of the planning areas. Marathon recognizes that some of the sale cancellations and delays were caused by factors outside of DOI control, however, there is no reason to believe that these same problems will not affect the next program.

1992 COMPREHENSIVE PROGRAM

The 1992 Comprehensive Program represents a dramatically smaller and less aggressive program. Compared to previous 5-Year Programs, this plan will have 41% fewer sales and a 73% reduction in acreage which would be available for leasing. Marathon is extremely concerned that acreage cannot be added to an approved plan while acreage deletions and sale cancellations can be expected. The relatively small size and scope of the Proposed Comprehensive Plan will result in lost revenues to the treasury and lost reserves in high potential basins due to their exclusions. Additionally, this limited program will expedite the shift of capital expenditures and budgets from domestic to international projects. A substantial negative impact to the domestic oil and gas industry will result from fewer opportunities to explore in the OCS under this proposed program. The chart below forecasts the possible outcome of the Comprehensive Program using results from the last program.

PROPOSED PROGRAM		PROJECTED PROGRAM	
Sales	Plan. Areas	Sales	Plan. Areas
23	12	8 (38%)	3 (29%)

THE OPERATING ENVIRONMENT IN THE GULF OF MEXICO HAS CHANGED

The Gulf of Mexico appears to be the cornerstone of the Comprehensive Program. Based on recent events and the following arguments, Marathon believes that the DOI dependence on the Gulf of Mexico as the foundation to build the next Comprehensive Program should be revisited.

Louisiana's recent lawsuit to block Sale 135 demonstrates the days of business as usual in the Gulf of Mexico are gone. Louisiana will no longer be the cornerstone of the Federal OCS Program without additional impact assistance. Even with impact assistance, Marathon believes Louisiana will never be as accommodating as in previous years. The industry now anticipates Louisiana will begin denying permits and applications and use their CZM Plan to thwart additional exploration, production and transportation of hydrocarbons much like California has successfully done over the past decade. If Louisiana's lawsuit is successful, the Comprehensive Program will be in jeopardy before it gets approved.

THE INDUSTRY SEES DIMINISHING EXPLORATION OPPORTUNITIES IN THE CENTRAL & WESTERN GULF OF MEXICO

Many factors impact leasing activity at OCS Sales. Product price and stability are foremost considerations, however, the Gulf of Mexico has shown a consistent decline in leasing activity during the last three years during relatively stable oil prices. Please refer to Chart 1 attached hereto which shows the total number of leases awarded in the Central and Western Gulf of Mexico over the last six years. Although, 1986-1988 show an increase in leasing activity, this was due primarily to two major factors. First, the industry rebound from extensive downsizing and restructuring caused by $8-10/barrel product price in the mid 80's. Secondly, lease turnover from the first area wide sales in 1983 and 1984 accounted for the heavy leasing activity in 1988 and 1989. Marathon believes the decreased leasing activity for the last two years reflects a valid trend for the foreseeable future.

The DOI has offered area wide sales in the Gulf of Mexico for the last eight years. Although the Gulf of Mexico is currently the most prospective area to find additional reserves on the Outer Continental Shelf, each year the area becomes more mature with fewer and smaller exploration opportunities. It is a recognized fact in the industry that good quality prospects in the Gulf of Mexico have been more difficult to generate with each passing area wide sale. The OCS program should continue to have an area wide sale every year in the Gulf of Mexico, but new areas need to be made available to allow the industry the lead time necessary to explore and develop new discoveries to offset the inevitable decline of production in the Gulf. These new areas should be in California (Central and Southern), Alaska Cook Inlet, and Atlantic (Mid and South).

A RELIABLE AND PREDICTABLE SALE SCHEDULE IS REQUIRED

The industry and the nation need a Five Year Plan which is predictable and stable. Strategic and prudent business decisions cannot be made without this stability. The industry has begun shifting exploration and production budgets into international areas. This trend will undoubtedly continue in the future. The United States recently deployed 500,000 American troops in a strategic oil region of the world to insure political and economic stability. Americans died in this conflict while prospective areas for exploration and production in the United States were being cancelled and defeated in the name of environmental safety.

There are several areas in the United Stated which have the potential to significantly offset the United States dependency on foreign imports, however, by moratoria or misuse of CZM Programs, these areas continue to be placed off limits to leasing, exploration and production. California was rated by many oil companies as the third best OCS area to explore based on the industry interest rankings of the planning areas. However, the Minerals Management Service has proposed only one California Sale containing 87 blocks and it is rumored the Administration and DOI are offering to delete these 87 tracts from the Comprehensive Program as a trade to gain congressional approval to open the Arctic National Wildlife Refuge.

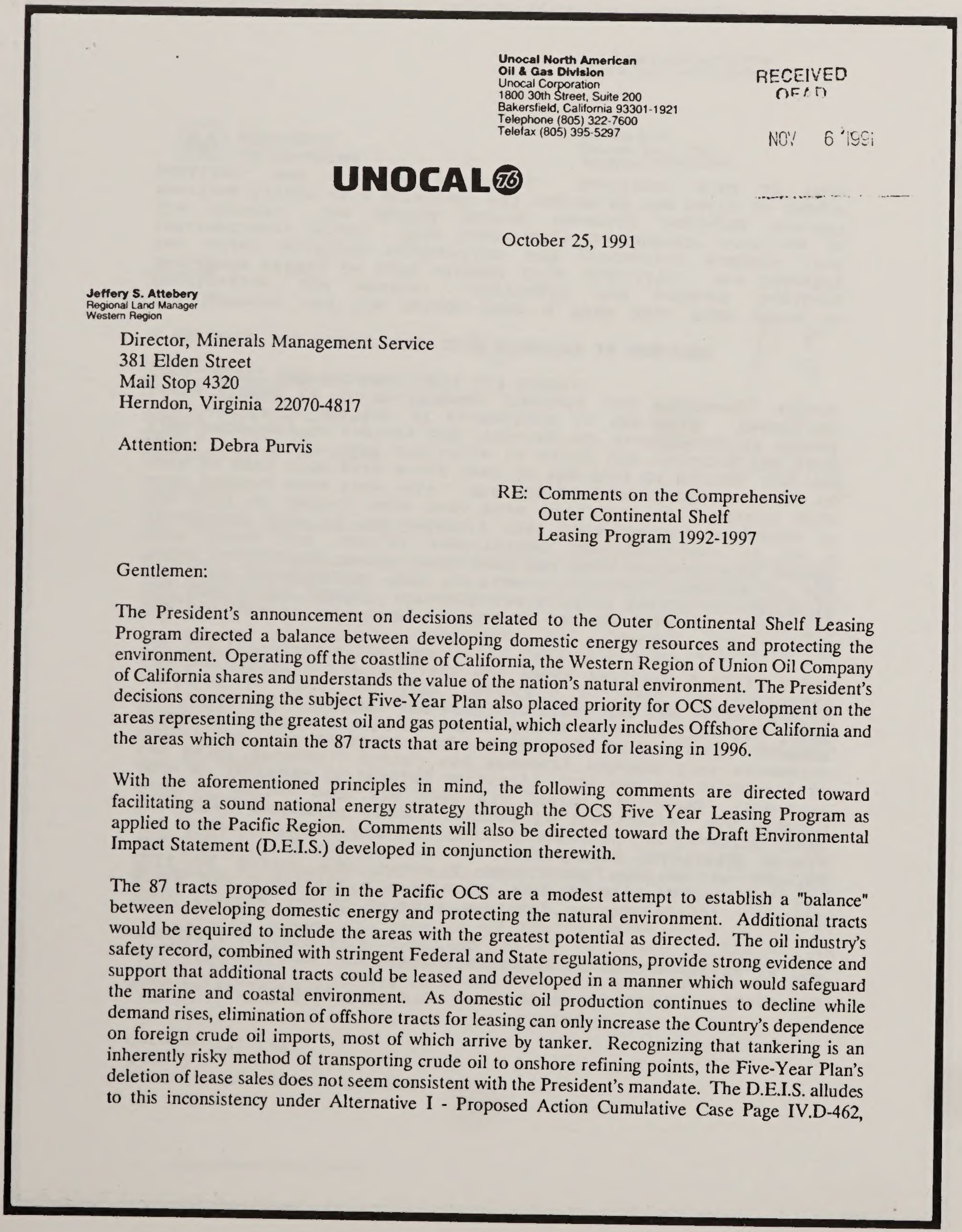
In summary, Marathon requests the Department of Interior to enlarge the proposed Comprehensive Program by including additional sales and acreage in California (Central and Southern), Alaska (Cook Inlet) and the Atlantic (Mid & South). The Department of Interior should continue to oppose appropriations moratoria, expansion of ocean sanctuaries and states misuse of CZMA Programs, solely for the purpose of sabotaging Federal OCS Leasing Programs. Only by including enough acreage in the approved plan and aggressively defending all attacks on the program can the U. S. Outer Continental Shelf be adequately and properly explored and developed.

Thank you again for considering our comments.

Very truly yours,

M. J. Koenig
Land Manager

MJK/ciu:A:MJK926



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October 25, 1991

Jeffery S. Attebery
Regional Land Manager
Western Region

Director, Minerals Management Service
381 Elden Street
Mail Stop 4320
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Attention: Debra Purvis

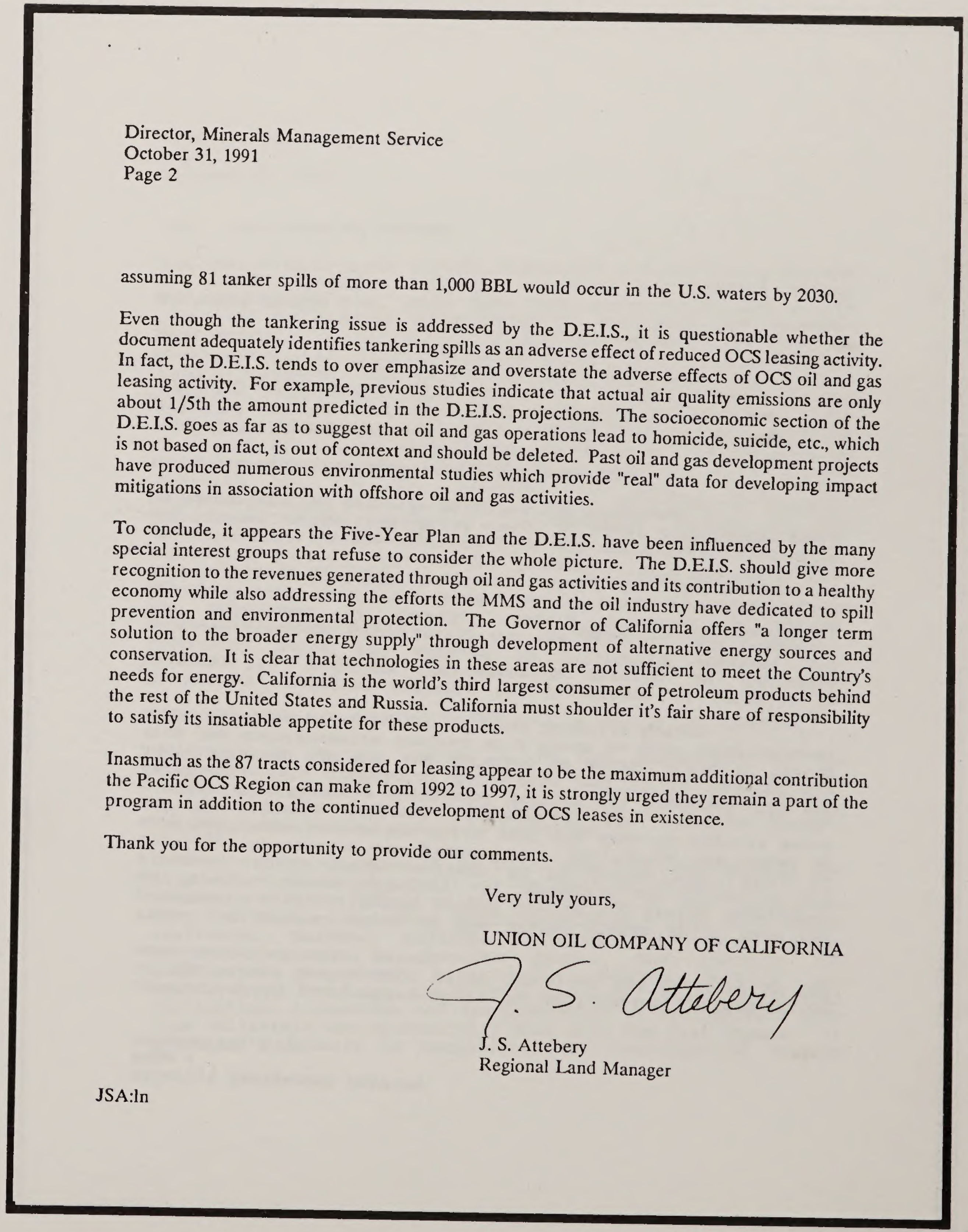
RE: Comments on the Comprehensive
Outer Continental Shelf
Leasing Program 1992-1997

Gentlemen:

The President's announcement on decisions related to the Outer Continental Shelf Leasing Program directed a balance between developing domestic energy resources and protecting the environment. Operating off the coastline of California, the Western Region of Union Oil Company of California shares and understands the value of the nation's natural environment. The President's decisions concerning the subject Five-Year Plan also placed priority for OCS development on the areas representing the greatest oil and gas potential, which clearly includes Offshore California and the areas which contain the 87 tracts that are being proposed for leasing in 1996.

With the aforementioned principles in mind, the following comments are directed toward facilitating a sound national energy strategy through the OCS Five Year Leasing Program as applied to the Pacific Region. Comments will also be directed toward the Draft Environmental Impact Statement (D.E.I.S.) developed in conjunction therewith.

The 87 tracts proposed for in the Pacific OCS are a modest attempt to establish a "balance" between developing domestic energy and protecting the natural environment. Additional tracts would be required to include the areas with the greatest potential as directed. The oil industry's safety record, combined with stringent Federal and State regulations, provide strong evidence and support that additional tracts could be leased and developed in a manner which would safeguard the marine and coastal environment. As domestic oil production continues to decline while demand rises, elimination of offshore tracts for leasing can only increase the Country's dependence on foreign crude oil imports, most of which arrive by tanker. Recognizing that tankering is an inherently risky method of transporting crude oil to onshore refining points, the Five-Year Plan's deletion of lease sales does not seem consistent with the President's mandate. The D.E.I.S. alludes to this inconsistency under Alternative I - Proposed Action Cumulative Case Page IV.D-462, assuming 81 tanker spills of more than 1,000 BBL would occur in the U.S. waters by 2030.



Even though the tankering issue is addressed by the D.E.I.S., it is questionable whether the document adequately identifies tankering spills as an adverse effect of reduced OCS leasing activity. In fact, the D.E.I.S. tends to over emphasize and overstate the adverse effects of OCS oil and gas leasing activity. For example, previous studies indicate that actual air quality emissions are only about 1/5th the amount predicted in the D.E.I.S. projections. The socioeconomic section of the D.E.I.S. goes as far as to suggest that oil and gas operations lead to homicide, suicide, etc., which is not based on fact, is out of context and should be deleted. Past oil and gas development projects have produced numerous environmental studies which provide "real" data for developing impact mitigations in association with offshore oil and gas activities.

To conclude, it appears the Five-Year Plan and the D.E.I.S. have been influenced by the many special interest groups that refuse to consider the whole picture. The D.E.I.S. should give more recognition to the revenues generated through oil and gas activities and its contribution to a healthy economy while also addressing the efforts the MMS and the oil industry have dedicated to spill prevention and environmental protection. The Governor of California offers "a longer term solution to the broader energy supply" through development of alternative energy sources and conservation. It is clear that technologies in these areas are not sufficient to meet the Country's needs for energy. California is the world's third largest consumer of petroleum products behind the rest of the United States and Russia. California must shoulder it's fair share of responsibility to satisfy its insatiable appetite for these products.

Inasmuch as the 87 tracts considered for leasing appear to be the maximum additional contribution the Pacific OCS Region can make from 1992 to 1997, it is strongly urged they remain a part of the program in addition to the continued development of OCS leases in existence.

Thank you for the opportunity to provide our comments.

Very truly yours,

UNION OIL COMPANY OF CALIFORNIA

J. S. Attebery

J. S. Attebery
Regional Land Manager

JSA:ln

Private Citizens

2045 Skylark Lane
San Luis Obispo, CA. 93401
October 9, 1991

Dir.Minerals Management Service
381 Elden Street
Mail Stop 4340
Herndon, VA. 22070-4817

Attn: Debra Purvis

I am writing to protest the terribly inadequate Environmental Impact Statement prepared by the MMS regarding the oil lease sales in the Santa Maria Basin off the coast of Southern and Central California. I was ill and could not get to the hearing in Santa Maria, and probably could not have gotten to speak if I could have gone as many of my friends could not get into the small room provided for the meeting.

I am particularly upset because the EIS did not examine the effects of seismic testing in the Basin. Oil exploration cannot go on without the testing and I fear there will be terribly negative effects on the fish and sea mammals in the area.

As a resident of the California Central Coast for 31 years (I am 68 years of age), I am very aware of the importance of fishing and the presence of mammals to the maintenance of tourism in this area. Without tourism, our economic slump in this area will be even worse than it alreadyis under this Bush administration. Is Bush determined to drive us into poverty one way or another?

Sincerely yours,

Arlene Chandler

FRANKLIN S. CRANE
281 Albert Drive
San Luis Obispo, California 93401

October 7, 1991

Director, Minerals Management Service
Atten.: Debra Purvis- MS 4320
381 Elden Street
Herndon, VA 22070-4817

Dear Sir:

I am writing to support the MMS Five-Year OCS Leasing Plan. With reference to the Draft Environmental Inpact Statement (DEIS), the CONCLUSION, I.V.D-477, ends with: "but are not expected to contribute to chronic degredation of water quality in the region", which is reassuring.

In addition, I as an independent Petroleum Engineer, refute the last sentence of the next-to-last paragraph of that page. On the contrary, self interest of the driller favors placing the mud in storage, for future use, at the end of well drilling. I am sure that the industry group, C/COG, will verify that statement.

Yours very truly,

Franklin S. Crane

Franklin S. Crane

October 23, 1991

B. EVANS(1)

TO: Director, Minerals Management Service (DOI)
Mr. Barry Williamson
1849 "C" St., NW
Washington, D.C. 20240

Director, Minerals Management Service (DOI)
Attn. Debra Purvis -MS 4320
381 Elden St.
Herndon, VA. 22070-4817

SUBJ: DEIS, Proposed Natural Gas + Oil Resources Management - Comprehensive Program 1992-1997

It was my intention to give a verbal statement at the September 18th. Public Hearing in Santa Maria regarding the above DEIS and the 87 Lease Tracts, as well as written comments. Due to the number of interested + concerned citizens who attended + signed up to give verbal statements, I was unable to deliver mine before the hearing was terminated.

We have a collective Congressional + legal mandate here - for me to give comments on this proposed lease, for you to give due process and consideration to me and other citizens to be heard, and comments duly evaluated before a decision is made to lease. The decision of the MMS and the Secretary of the Interior is mandated and predicated on the composite of citizen concerns, citizen's approval or disapproval, citizen's real or imagined dangers and impacts, and the best available complete, unbiased scientific findings to indicate short and long-term economic/environmental impacts, cumulative and residual impacts on the resource base affected, and the coastal population and natural resources affected.

The decision made, if one of integrity and professionalism, must reflect best technology (practically) available for resource extraction and for "disaster" response. The real or hypothetical immediate or near-term need to develop the resource must be addressed legitimately. The available (energy) alternatives must be assessed [illegible] in a non-arbitrary manner if the resource is not explored and developed (if economically justified).

The Draft EIS is grossly incomplete for its failure to address & to include obvious issues and concerns that should be, must be those of the MMS. Is this flagrant implied incompetence accidental or intentional? Was this DEIS partially done cut + paste by people in Washington, D.C. or is Dr. Lisle Reed's professional staff really this woefully inadequate + myopic?

The DEIS never even addresses, or even alludes to, many of the more interdependent and complex aspects of this marine ecosystem - tidal currents, estuaries, marine mammals, migrations, endangered species, sea-plant communities, inter-tidal zones, bird species. The resident MMS geographer should already have been fired - he not only has inaccurate data in the DEIS, he/she completely omits several critical, germane geographic features and locations which are required to fully address the issues and parameters of the DEIS. The focus of on-site impacts to the marine ecosystem is simplistic and naive. The implications and consequences of the necessary seismic testing are not addressed. The contradictions implicit with oil + gas RFD within the 87 Lease Tracts, and much of the area qualifying and proposed as a Natl. Marine Sanctuary are serious and seem to have escaped or been ignored by those preparing the DEIS. Adequate discussion of the characteristics (or even the existence) of such mainline oceanographic entities as Morro Bay + estuary and the Santa Maria Basin + its adjacent wetlands is lacking. Potential drilling + production impacts on fisheries resources, microscopic nutrients, and kelp beds are ignored or glossed.

Why aren't more skilled, thorough, + better prepared staff involved with and analyzing these issues and topics?

Should we conclude that the MMS is understaffed, ill-trained, and inadequate professionally - so as to necessitate turning over the Final EIS task to another agency, or perhaps an independent consulting firm?

The 87 Lease Sites between Pt. Conception (South) and Point Sur (North) should be included within the moratorium on the remainder of the California coast, at least through the year 2000. The same straightforward conclusion would in no way escape the MMS, the DOI, and the White House staff IF alternative energy strategies would be aggressively pursued and implemented; and vehicle efficiency standards expanded.

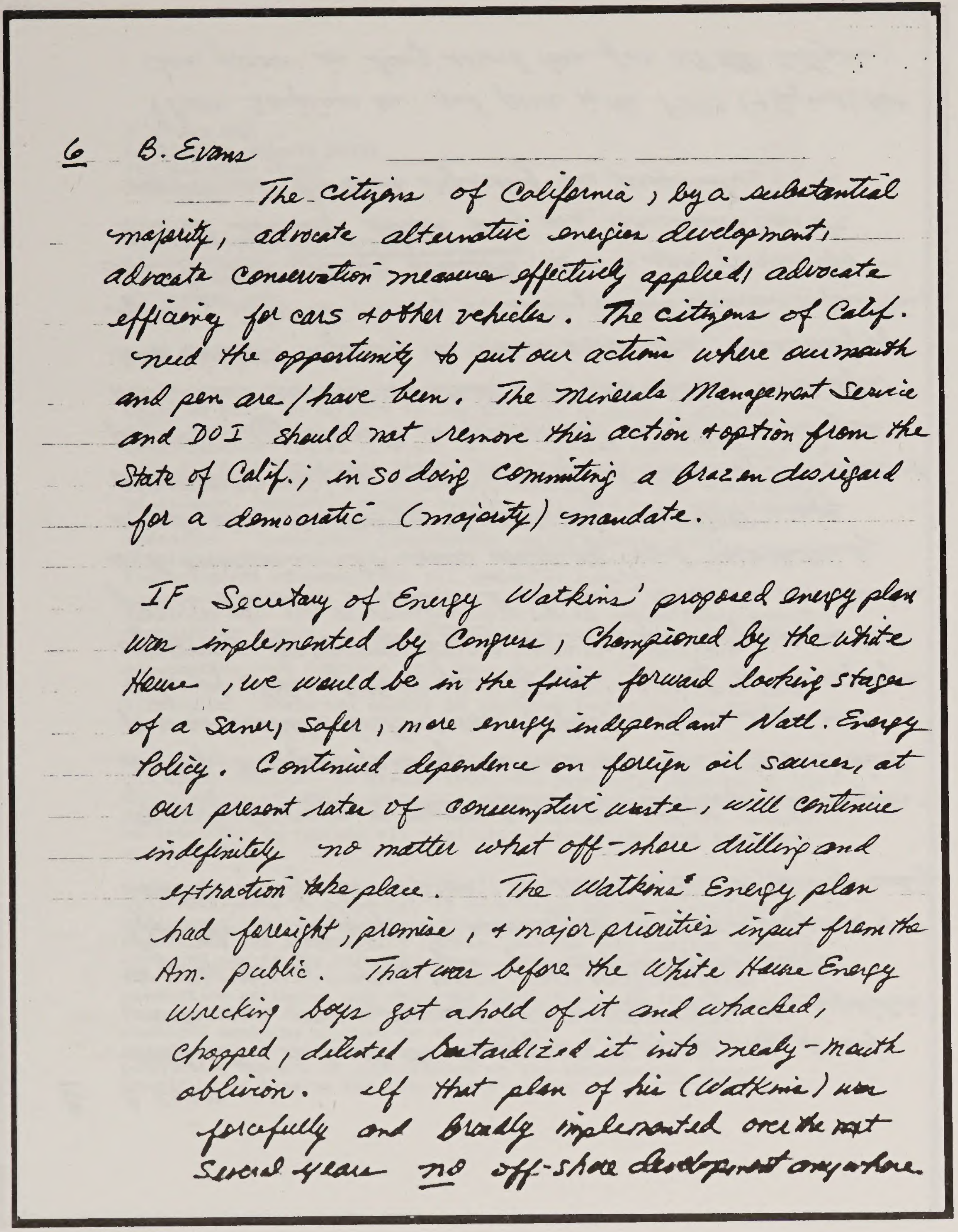
The draft EIS does not adequately or accurately address alternative options including a no-lease/no-R&D development.

The draft EIS makes no mention of long-term impacts along the Coastal areas adjacent to the off-shore drilling/production platforms. There will be a substantial build-up of near-, on-shore facilities in conjunction with this development. Whatever oil is located will only take a certain short no. of years to pump out. Then the oil companies leave & left behind is the dregs

to cope with and a local coastal economy impacted suddenly by loss of revenue.

Where will all the toxic muds, residues, & materials from drilling and start-up production be transported and disposed of? Perhaps under cover of darkness, like our good neighbor Chevron, conveniently shoved off the platforms into the deep blue sea. No big deal, no one's gonna see, big business as usual. All for God and country, of course! A higher cause made us do it. No doubt!

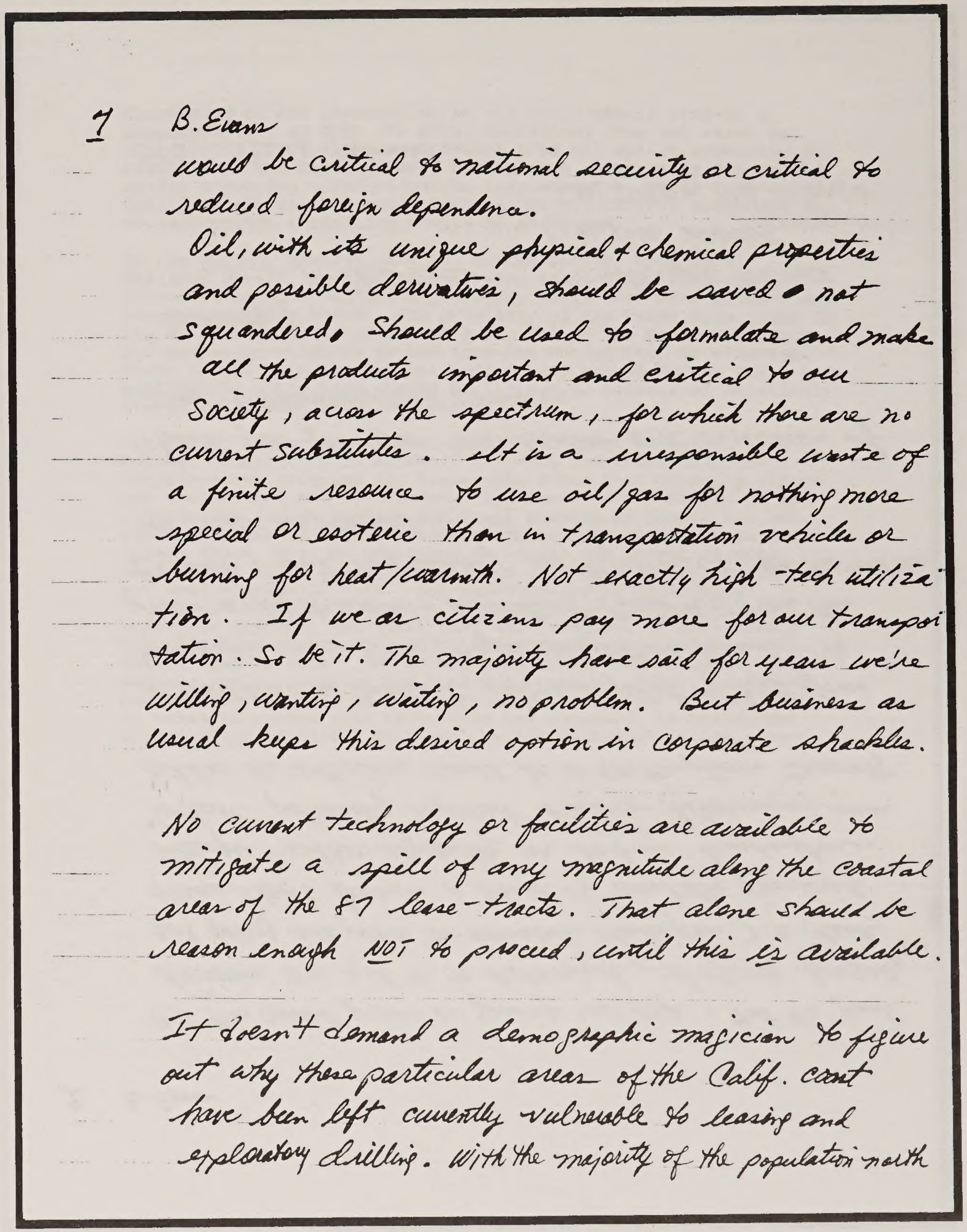
I am opposed categorically to any leasing or exploratory drilling or development of the 87 tracts. The marginal and limited resource, even at its most optimistic, is not needed now by the U.S. Public or the U.S. Gov't. It's a stop-gap, band-aid, gasp, cop-out approach to our energy future, our energy independence, a sane and saving nat'l. energy policy. The potential unmitigatable impacts on the marine environment are absolutely unacceptable. The potential impacts on the coastal environment are not worth the risk. The short-term gain for local economies would, in the long-term, be more deleterious and delusional than stable and promising.



6 B. Evans

The citizens of California, by a substantial majority, advocate alternative energies development; advocate conservation measures effectively applied; advocate efficiency for cars + other vehicles. The citizens of Calif. need the opportunity to put our action where our mouth and pen are / have been. The Minerals Management Service and DOI should not remove this action + option from the State of Calif.; in so doing committing a brazen disregard for a democratic (majority) mandate.

IF Secretary of Energy Watkins' proposed energy plan was implemented by Congress, Championed by the White House, we would be in the first forward looking stages of a saner, safer, more energy independant Natl. Energy Policy. Continued dependence on foreign oil sources, at our present rates of consumptive waste, will continue indefinitely no matter what off-shore drilling and extraction take place. The Watkins' Energy plan had foresight, promise, + major priorities input from the Am. public. That was before the White House Energy wrecking boys got ahold of it and whacked, chopped, deleted bastardized it into mealy-mouth oblivion. If that plan of his (Watkins) was forcefully and broadly implemented over the next several years no off-shore development anywhere



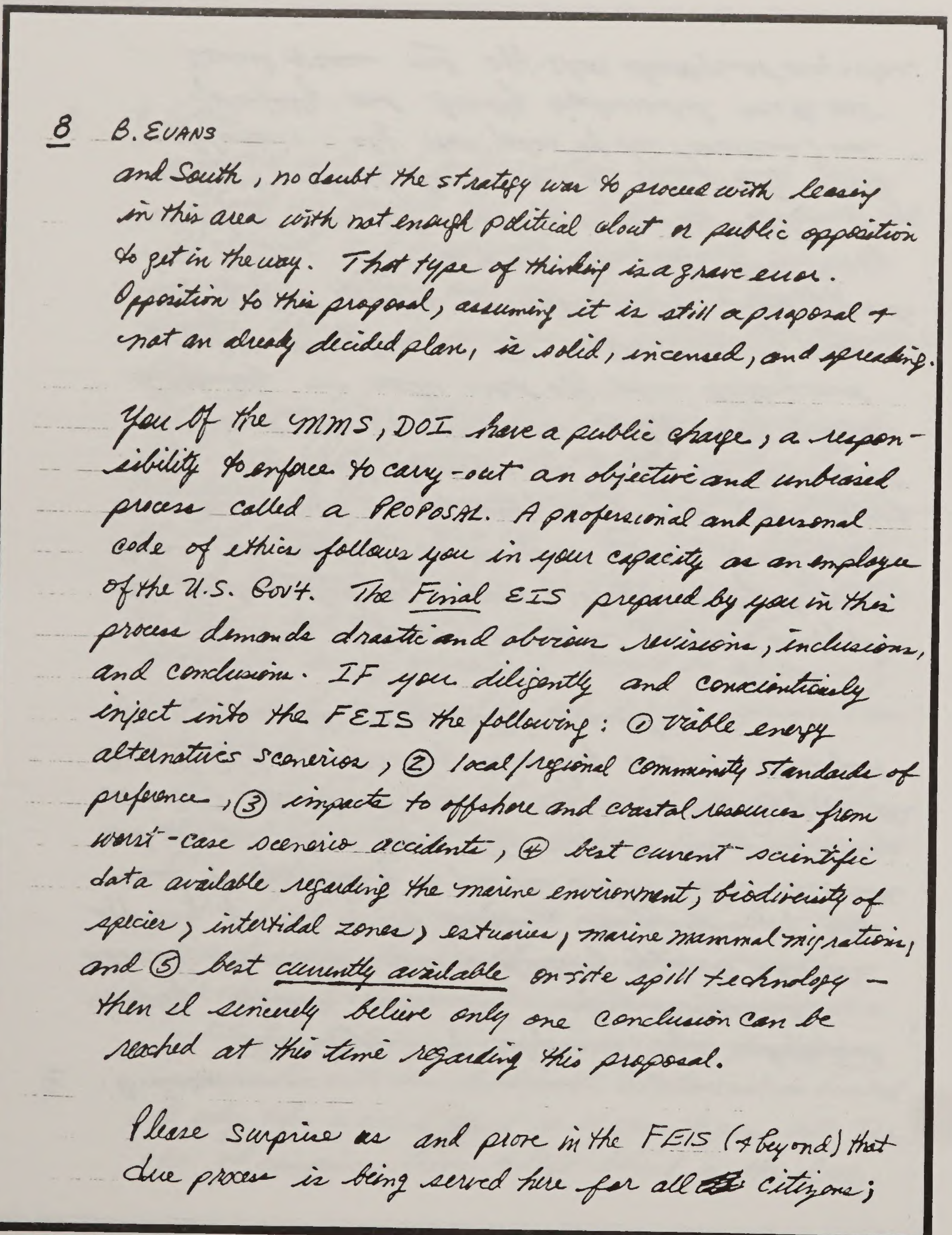
7 B. Evans

would be critical to national security or critical to reduced foreign dependence.

Oil, with its unique physical + chemical properties and possible derivatives, should be saved • not squandered. Should be used to formulate and make all the products important and critical to our Society, across the spectrum, for which there are no current substitutes. It is a irresponsible waste of a finite resource to use oil/gas for nothing more special or esoteric than in transportation vehicles or burning for heat/warmth. Not exactly high-tech utilization. If we as citizens pay more for our transportation. So be it. The majority have said for years we're willing, wanting, waiting, no problem. But business as usual keeps this desired option in corporate shackles.

No current technology or facilities are available to mitigate a spill of any magnitude along the coastal areas of the 87 lease-tracts. That alone should be reason enough NOT to proceed, until this is available.

It doesn't demand a demographic magician to figure out why these particular areas of the Calif. coast have been left currently vulnerable to leasing and exploratory drilling. With the majority of the population north

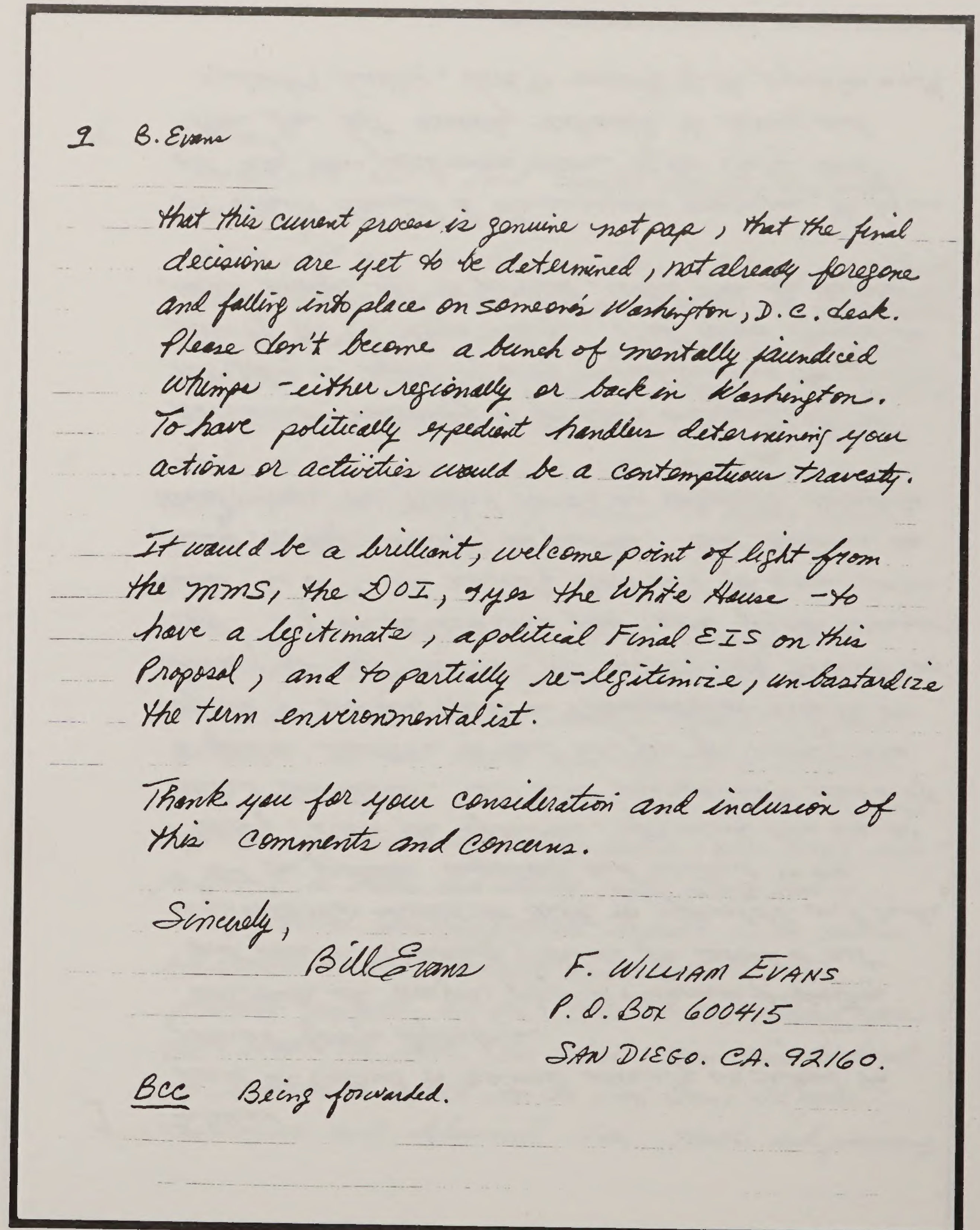


8 B. EVANS

and South, no doubt the strategy was to proceed with leasing in this area with not enough political clout or public opposition to get in the way. That type of thinking is a grave error. Opposition to this proposal, assuming it is still a proposal + not an already decided plan, is solid, incensed, and spreading.

You of the MMS, DOI have a public charge, a responsibility to enforce to carry-out an objective and unbiased process called a PROPOSAL. A professional and personal code of ethics follows you in your capacity as an employee of the U.S. Govt. The Final EIS prepared by you in this process demands drastic and obvious revisions, inclusions, and conclusions. IF you diligently and conscientiously inject into the FEIS the following: ① viable energy alternatives scenerios, ② local/regional community standards of preference, ③ impacts to offshore and coastal resources from worst-case scenerio accidents, ④ best current scientific data available regarding the marine environment, biodiversity of species, intertidal zones, estuaries, marine mammal migrations; and ⑤ best currently available on-site spill technology – then I sincerely believe only one conclusion can be reached at this time regarding this proposal.

Please surprise us and prove in the FEIS (+ beyond) that due process is being served here for all citizens;



9 B. Evans

that this current process is genuine not pap, that the final decisions are yet to be determined, not already foregone and falling into place on someone's Washington, D.C. desk. Please don't become a bunch of mentally jaundiced whimps – either regionally or back in Washington. To have politically expedient handlers determining your actions or activities would be a contemptuous travesty.

It would be a brilliant, welcome point of light from the MMS, the DOI, + yes the White House – to have a legitimate, apolitical Final EIS on this Proposal, and to partially re-legitimize, un-bastardize the term environmentalist.

Thank you for your consideration and inclusion of this comments and concerns.

Sincerely,

Bill Evans

F. WILLIAM EVANS
P. O. Box 600415
SAN DIEGO. CA. 92160.

Bcc Being forwarded.

P.O. Box 992
Dillingham, Alaska 99576
907-842-4009 (home)
907-842-1063 (business)

NOV 1 3 1991

Director
Minerals Management Service
1849 C Street, NW.
Washington, DC 20240
23 October 1991

Dear Director:

The justification for outer continental shelf exploration is weak, at best, as defined in the Minerals Management Service draft Environmental Impact Statement for the 1992-1997 Comprehensive Program (August, 1991). Leasing and developing the sale areas in the Alaska region creates more dependence on non-renewable and costly oil resources, and there is less development of cleaner, renewable energy sources. Oil and gas resources are finite--they will run out, no matter how many sale areas are developed. Renewable, alternative energy sources exist; developing these sources requires similar financial support and technological advances that oil companies receive.

Americans must also be educated as to how to reduce their energy consumption levels, which, as MMS states, are predicted to rise over the next ten years. The trend should be to decrease consumption, not increase it. Many Europeans have, out of necessity, opted for fuel-saving devices employed in their daily lifestyles. These can easily be employed in the United States, thus reducing our demand for fossil fuels.

The EIS does not incorporate information from the Exxon Valdez oil spill studies. In March, 1991, the Summary of Effects of the Exxon Valdez Oil Spill on Natural Resources and Archaeological Resources was released in the Federal Register. The EIS should be rewritten to include all available information from these oil spill studies.

Monitoring effects of the oil spill is a continuous process which will take years to complete, if completion can be accomplished. Biologists simply do not know what will happen to the wildlife population and productivity cycles, and can only monitor what is occuring now in the affected areas. The EIS states that although the risk of spill occurrence can be readily estimated using production estimates and observed spill rates, it is not possible to predict the degree to which a particular environmental resource would be exposed to spilled oil. Obviously then, until precise and accurate models can be generated for use in predicting impacts of exploration on the environment, there should be no leasing for the Alaska region.

Responding to and cleaning up an oil spill should also be a responsibility of MMS. To date, technology does not exist to effectively protect the environment from oil spills occurring in Alaska. In the Beaufort Sea, during open water, only 30% of the spills occurring offshore can be responded to. Until 100% of the spills in all weather conditions can be effectively responded to, no exploration activities should be permitted.

In the Norton, Navarin, and St. George basins, Cook Inlet-Shelikof Strait, and Yakutat Terrain, exploration will require extensive methods, as all exploratory wells have been plugged and abandoned as dry holes. The proximity of the lease sale areas in the St. George Basin to Unimak Pass, one of the major corridors for migrating wildlife to and from the Bering Sea, is alarming. There should be a substantial buffer zone around Unimak Pass, and exploration activities should be limited to seasons of relatively low wildlife abundance in the area.

Typically, there is anti-exploration sentiment throughout the coastal communities in Alaska. Yet, MMS continues to present Comprehensive Programs for lease sale areas that directly affect our communities and livelihood. The short-term benefits of non-sustainable income sources for small numbers of people are not worth the risk to the environment. When two volumes, each two inches thick, must be published to assess the impact of outer continental shelf exploration, it is obvious that exploration is not environmentally safe. MMS representatives conducting "meetings" here in Dillingham, have politely listened to the unanimous protest, yet admit they are incapable of effectively communicating that sentiment to the appropriate channels. The bottom line is this: We do not support OCS exploration. The reasons are so apparent and numerous, that we cannot understand how MMS can continue with their programs. We want to know what it takes to remove sale areas from the schedule, if biological evidence and unanimous anti-exploration sentiment is not enough.

Sincerely,
Lisa Haggblom
Lisa Haggblom

Director, Minerals Management Service　　22 Sept.'91
381 Elden Street
Mail Stop 4340
Herdon, Virginia 22070 4817

Re:Comments on Comprehensive Program Draft-EIS

Dear Sirs/Ladies,

I have lived on the central coast nearly twenty years, and I am vehemently opposed to off shore oil drilling. I have many reasons for taking this position. The following text will attempt to express some of these views and the rationale behind them.

The coastal waters off San Luis Obispo, Santa Barbara and Ventura counties are not an appropriate national sacrifice area. Interior Department documents provide no criteria for the decision to allow earlier leasing here.

I support permanent protection of the coastal waters by creating and Ocean Sanctuary. This would insure protection to our fishing, recreation and tourism industry.

Scientific studies about oil spill cleanup capabilities in hazardous seas as well as toxic discharge and air pollution from oil rig drilling, and impacts on commercial fishing as well as other impacts will not be completed in time to permit the lease sale of coastal tracts in 1996.

We must plan for a future without oil. Time is running out. The oil off the central coast is so poor that some 50 out the original 87 tracts have not been developed. The estimate is that a mere 60 days of oil energy needs is all that is available. It seems fool hardy to risk environmental destruction for such a small and poor quality oil reserve. Remember the devastating oil platform leak in Santa Barbara twenty years ago. "They" said: It could never happen!

An oil man recently told me that it could never happen again ! What about active earthquake faults lying off the central coast ? All the safe guards in the world could not prevent devastating results if an earthquake of large magnitude hit near off shore oil platforms ! Man cannot predict acts of nature and will never solve all the problems in the world by technological means !

Now is the time to press forward for a National Energy Policy. One that emphasizes; conservation and use of renewable resources such as wind and solar. Why take a chance of destroying some of the remaining coastal beauty for a few months supply of oil ?

The Department of Interior is supposed to be the stewards of our federal lands and oceans ! It's time to start paying attention to the will of the people and protect our national treasures like the oceans and forests instead of selling out to the oil and timber industries.

I would like to express my disdain for your planning of the recent hearings in Santa Maria, on 18 Sept.'91. 1700 people showed up in a room that could only hold 300 ! This is an insult to the freedom of assembly and free speech guaranteed in the U.S. Constitution ! Further more only 55 out of 300 people were able to present testimony !

In closing I would cogently suggest another hearing be held in the near future. This would the allow the remaining 250 people to express their opinions in opposing off shore oil drilling ! I further recommend that the hearing be held in San Luis Obispo, California and that a football stadium be used, for believe me, your going to need it !

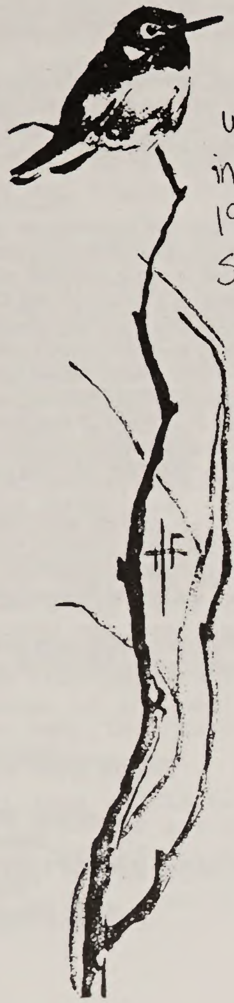
Respectfully yours,

Michael R. Miller

Michael R. Miller
1205 Bay Oaks Drive
Los Osos, CA 93402

cc: Congressman Paneta
Congressman Thomas
Senator Cranston
President Bush

October 19, 1991



The following is a list of what are very serious inadequacies in the Comprehensive Program 1992-1997 Draft Environmental Impact Statement.

1. No description of kelp forest ecosystems.
2. No mention of the Morro Bay estuary or discussion of its importance to the ecosystem.
3. No discussion of the relationship of local sandy beaches with adjacent rocky intertidal areas as one ecosystem, not two independant systems.
4. No identification of state preserves nor discussion on the reasons for protection.
5. No discussion on the huge and significant population growths for sea mammals and sea and shore birds in the area.

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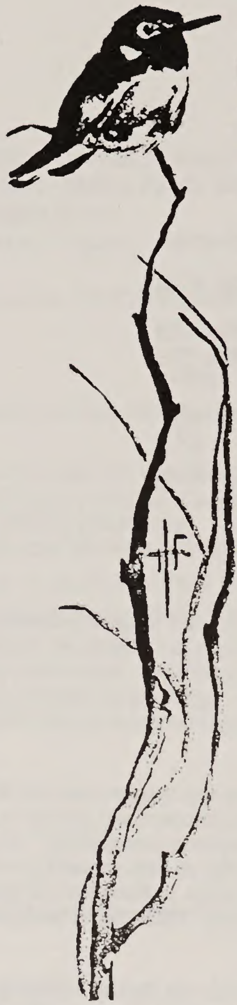
pg. 2

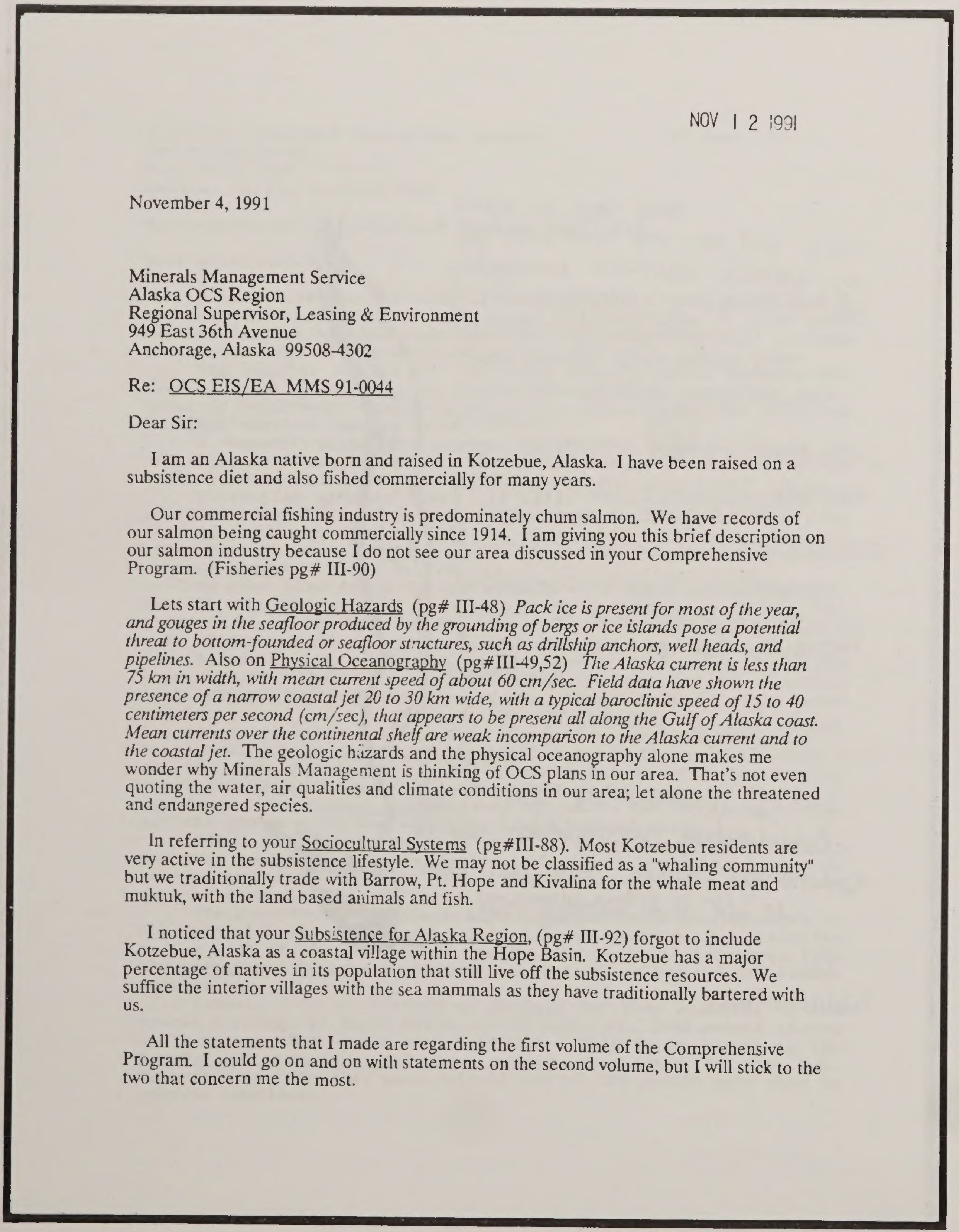


6. Information about the Chumash is incorrect ~ perhaps because local Chumash or knowledgeable archaeologists were not contacted.
7. Where is the oil spill recovery technology that can clean up an accident?
8. Can you prove that drilling operations do not pollute, destroy, disrupt and damage the ecosystem?

I am opposed to this lease plan to authorize offshore oil drilling; if this EIS is supposed to convince me otherwise, I would have to recommend trying again!

Sincerely

Robin Perrin
San Luis Obispo, CA



NOV 1 2 1991

November 4, 1991

Minerals Management Service
Alaska OCS Region
Regional Supervisor, Leasing & Environment
949 East 36th Avenue
Anchorage, Alaska 99508-4302

Re: OCS EIS/EA MMS 91-0044

Dear Sir:

I am an Alaska native born and raised in Kotzebue, Alaska. I have been raised on a subsistence diet and also fished commercially for many years.

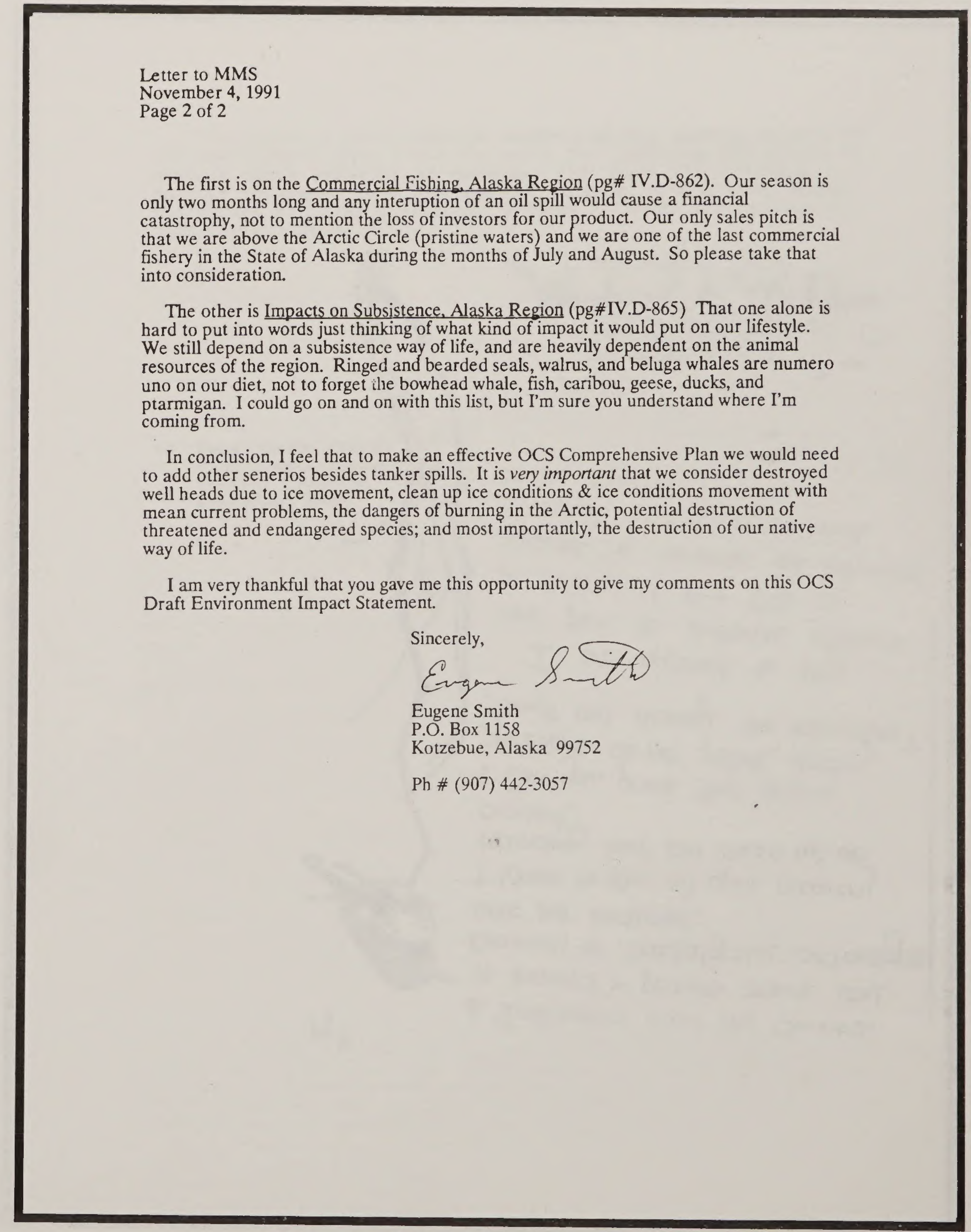
Our commercial fishing industry is predominately chum salmon. We have records of our salmon being caught commercially since 1914. I am giving you this brief description on our salmon industry because I do not see our area discussed in your Comprehensive Program. (Fisheries pg# III-90)

Lets start with Geologic Hazards (pg# III-48) *Pack ice is present for most of the year, and gouges in the seafloor produced by the grounding of bergs or ice islands pose a potential threat to bottom-founded or seafloor structures, such as drillship anchors, well heads, and pipelines.* Also on Physical Oceanography (pg#III-49,52) *The Alaska current is less than 75 km in width, with mean current speed of about 60 cm/sec. Field data have shown the presence of a narrow coastal jet 20 to 30 km wide, with a typical baroclinic speed of 15 to 40 centimeters per second (cm/sec), that appears to be present all along the Gulf of Alaska coast. Mean currents over the continental shelf are weak incomparison to the Alaska current and to the coastal jet.* The geologic hazards and the physical oceanography alone makes me wonder why Minerals Management is thinking of OCS plans in our area. That's not even quoting the water, air qualities and climate conditions in our area; let alone the threatened and endangered species.

In referring to your Sociocultural Systems (pg#III-88). Most Kotzebue residents are very active in the subsistence lifestyle. We may not be classified as a "whaling community" but we traditionally trade with Barrow, Pt. Hope and Kivalina for the whale meat and muktuk, with the land based animals and fish.

I noticed that your Subsistence for Alaska Region, (pg# III-92) forgot to include Kotzebue, Alaska as a coastal village within the Hope Basin. Kotzebue has a major percentage of natives in its population that still live off the subsistence resources. We suffice the interior villages with the sea mammals as they have traditionally bartered with us.

All the statements that I made are regarding the first volume of the Comprehensive Program. I could go on and on with statements on the second volume, but I will stick to the two that concern me the most.



Letter to MMS
November 4, 1991
Page 2 of 2

The first is on the Commercial Fishing, Alaska Region (pg# IV.D-862). Our season is only two months long and any interuption of an oil spill would cause a financial catastrophy, not to mention the loss of investors for our product. Our only sales pitch is that we are above the Arctic Circle (pristine waters) and we are one of the last commercial fishery in the State of Alaska during the months of July and August. So please take that into consideration.

The other is Impacts on Subsistence, Alaska Region (pg#IV.D-865) That one alone is hard to put into words just thinking of what kind of impact it would put on our lifestyle. We still depend on a subsistence way of life, and are heavily dependent on the animal resources of the region. Ringed and bearded seals, walrus, and beluga whales are numero uno on our diet, not to forget the bowhead whale, fish, caribou, geese, ducks, and ptarmigan. I could go on and on with this list, but I'm sure you understand where I'm coming from.

In conclusion, I feel that to make an effective OCS Comprehensive Plan we would need to add other senerios besides tanker spills. It is *very important* that we consider destroyed well heads due to ice movement, clean up ice conditions & ice conditions movement with mean current problems, the dangers of burning in the Arctic, potential destruction of threatened and endangered species; and most importantly, the destruction of our native way of life.

I am very thankful that you gave me this opportunity to give my comments on this OCS Draft Environment Impact Statement.

Sincerely,

Eugene Smith

Eugene Smith
P.O. Box 1158
Kotzebue, Alaska 99752

Ph # (907) 442-3057

October 19, 1991

Director, Minerals Management Service
Attn: Debra Purvis
Environmental Projects Coordination Branch
381 Elden Street, Mail Stop 4320
Herndon, VA 22070

Dear Director,

As a Native American or as an non Native American but a supporter of the Native American rights and concerns, I find the Minerals Management Service COMPREHENSIVE PROGRAM 1992 - 1997 and its DRAFT ENVIRONMENTAL IMPACT STATEMENT inadequate and insensitive to the Native American peoples of the West Coast. Specifically, the description of the Chumash people who reside along the coasts of the Santa Barbara Channel and the Santa Maria Basin is wrong. The concerns of the Chumash are not mentioned. There is no mention of concerns of Native Americans between Point Sur and Ragged Point.

Local Native American people have not been contacted to discuss any real or possible impact of your program. Research financed by your agency for archaeology north of Morro Bay does not include information from any archaeologist residing in San Luis Obispo County. Thus, the EIS must be considered inadequate for Native American concerns and for archaeological concerns for both the Channel and the Basin.

I also find the EIS inadequate in its descriptions of the ecosystem of the Santa Maria Basin and the impacts of the program on the ecosystem. The EIS fails to describe the ocean currents, the four upwellings and the interaction of these with each other in the Basin. The kelp forest ecosystems are not addressed. The Morro Bay Estuary is not mentioned nor are the other coastal wetlands and smaller estuaries. The actual relationship of the Basin's sandy beach and rocky intertidal ecosystems are not described. There is no mention of the large shifts in sea mammal populations along the Basin's coastline. The changes in sea bird populations are not mentioned. The EIS wrongly assumes that there are existing oil processing and transportation facilities and thereby fails to describe real impacts of new construction. There is no adequate description of the socioeconomic impacts on Native and non-native Americans. And, the possible impacts from oil spills are not adequately addressed.

I further request that an EIS be prepared by an outside agency, such as NOAA, on the impacts of acoustic seismic testing. Considerable information exists outside the county regarding the real damage that such testing causes to the ecosystem. Such damage includes impacts on fish eggs and larvae, impacts on other microscopic life, and impacts on fish, birds and sea mammals.

Sincerely yours,

Robert H. Stevens

FREDERICK T. WEISS, Ph.D.
Environmental Consulting

October 22, 1991

TO: Director, Minerals Management Service (MMS)
Attention: Debra Purvis MS-4320
381 Elden Street
Herndon, Virginia 22070-4817

SUBJECT: "Comments: OCS Comprehensive Program 1992 - 1997"

Minerals Management Service Director:

Attached are my comments on the "Comprehensive Program 1992-1997 - Summary and Decision - Draft EIS" sent to me as a consequence of Dr. Reed's memorandum of July 31, 1991.

Since I am a member of the Pacific OCS Regional Technical Working Group, my comments are directed principally to issues of the Pacific Coast. I trust these comments will be useful.

Sincerely,

F. T. Weiss

F. T. Weiss
Member, Pacific Technical Working Group

FTW:pl

Attachments

cc: Dr. J. Lisle Reed
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COMMENTS ON SUMMARY & DECISION SECTION

Page 9 It is in this Section and, perhaps elsewhere, that the full significance of the OCS - derived energy materials should be more clearly stated and summarized. Significant points are made elsewhere, and noted in my comments, but often these are hidden in the text.

Emphasis on OCS - derived Natural Gas is very important. It is becoming increasingly recognized that natural gas is one of the most important candidates for the principal alternate fuel for motor vehicles as well as for stationary sources. The volume of natural gas in the U.S. is large, much of it from the OCS. The prospects are good that natural gas will provide cleaner automotive fuels and can, thus, displace a significant import of foreign crude.

Any increase in U.S. petroleum production, either gas and oil, would reduce dependence upon the tanker traffic of imported oil. Since natural gas may well displace oil for more and more uses, increased gas production can reduce need for oil. For instance, residual fuel usage for electrical generation; etc., is currently dropping in favor of use of gas. Manufacture of the alternate fuels; methanol, and the ether additives are derived from natural gas. Compressed Natural Gas is being used increasingly as an inexpensive fuel well suited to replace gasoline and diesel fuels.

The consequences of reduction in imported oil are many, all favorable. One, noted in the Draft Report, is lessening of oil spills since tanker traffic generates far more spilled oil than OCS production. This should be emphasized with data available from the National Academy Report, "Oil in the Sea," and from recent Coast Guard data. Comparisons for California are particularly striking. Since California uses petroleum to the extent of some $2\text{x}10^6$ B/day and produces only $1\text{x}10^6$ B/day, tanker imports are large and tanker spills appreciable. OCS losses have been small for the past decade. Consequently, increased OCS production in California will reduce spills.

COMMENTS ON VOLUME I, EIS

Page	Reference	Comment
ii	Par. 4,5	List of program effects are only the negatives. Some indication of the positive effects should be mentioned such as: (1) Increased production of natural gas, the clean-burning fuel for many uses. (2) Decreased tanker traffic resulting in less oil spills. (3) Improvement in U.S. economy, more jobs, better balance of payments. What are current unemployment levels? (4) Decreased dependence on overseas sources.
vi	Par. 6	This paragraph briefly states the substance of the above comment. I'd like to see such statements more prominent.
I-1	Par. 1,2	Suggest commenting that the OCS program will supply energy products to reduce environmental degradation. Natural gas has great potential as a clean-burning fuel for vehicles as well as a stationary fuel. Natural gas can also be used to manufacture methanol and ether additives.
II-9	Par. 6	principal
II-13	Par. 6	Good point that tanker spills would be "more frequent and less controllable" than assumed OCS spills. Could be stated elsewhere also.
III-114	Par. 5,6	Could the South Coast Air Basin expect an improvement in air quality from use of alternative fuels? Natural Gas (from OCS and elsewhere) is being considered for vehicle use.

COMMENTS ON VOLUME I, EIS (Cont.d)

Page	Reference	Comment
IV. B-5	Par. 5	This is the best single summary statement on Global Weather Change. The writer sensibly points out that without the natural "green house gases," the earth could not support life.
IV. D-5, D-9		This section estimates the continued production of OCS natural gas - very significant for the long-term future of this alternative fuel.
IV. D-45	Last Par.	benzene, etc. (l.c.)

COMMENTS ON VOLUME II, EIS

Page	Reference	Comment
IV. D-447	Table IV. D.1.C-1.	Would like to see Natural Gas also listed in a column subheaded BBOE. It is possible to back calculate this from Table C-2, and it becomes clear that natural gas is the dominant energy source from OCS. This should be discussed more completely in the text. What percent of U.S. gas resources are in the OCS? From other reading, I believe it may be some 20 to 24%. These are critical points on the value of the OCS to the Natural Energy Program.
IV. D-455	Par. 4	In discussing sulfur mining, suggest adding "using superheated steam (sulfur melting point is 120 degree C)."
IV. D.-458	Par. 7,8	What is the current status of these pipelines?
IV. D.-668	Table IV.D.2-1)	Loss of OCS Gas would bring a switch to residual oil, as pointed out in the text. It should be stated that residual oils have high sulfur, nitrogen and metals - much higher than crude since these are residues. Because the environmental quality of residual oil is so poor, U.S. use of residual is declining. The text is not correct in stating that imported residual would have similar impacts to imported crude. Residual fuel oils have generally very poor environmental quality and that is why their current use is declining. We should keep their use low.
IV.D.-672	Par. 1-4 Par. 5	It should be emphasized here and elsewhere that oil spilled from OCS development is minimal (Reference "Oil in the Sea," National Academy Press, 1985), whereas tanker accidents and tanker operations and traffic produce the major amount of oil spilled in the environment. A conclusion could be made, more clearly, that reduced OCS production means more spilled oil from increased tanker traffic.

COMMENTS ON VOLUME II, EIS (Contd.)

Page	Reference	Comment
IV.D.-672	Par. 5	This can be inferred from the text but not completely since the low rate of spillage from OCS production is not clearly brought out.
Appendix B	B-1 B-5	BTV (caps) VOC (caps)
Appendix C	Page IV-13 Par. 4	See comments on comparative oil spillage from tankers and OCS production in section IV.D.-672 above.
	Page IV-20 Par. 4	Should other factors be considered on conservation? Smaller, lighter cars may be less safe. Diesel exhaust, when engines are not well maintained, is high in carcinogenic particulates.
	Page IV-36 Par. 5	See comments on residual fuel in section IV.D. -668 above.
	Page IV-39 Par. 2	Wind turbines do kill birds and these are the more rare species of high flying, hunting birds, such as eagles, owls and hawks.
Appendix D	Page D-1 Par. 2	Here, again, the Draft Report does not clearly point out that oil spilled from OCS activities, in the U.S., is minimal and that from tankers is vastly greater. Not only are the amounts from OCS less, but the nature of such a spill is completely different from a tanker spill. In the case of a tanker accident, the oil is lost within a few hours at a previously undetermined location, generally some distance from immediate assistance. Thus 200,000 barrels, or more, can within a few hours be put into the ocean.

COMMENTS ON VOLUME II, EIS (Contd.)

Page	Reference	Comment
Appendix D	Page D-1 Par. 2	In case of an OCS spill, of which there have been none of serious volume in the U.S. in the past decade, the spill would be in a fixed area, under close supervision. At the very worst the amount of oil entering the environment is limited by the wells production capacities, at the most, 20,000 barrels per day. This location and controls nearly mitigate against any accident as serious as the tanker accidents which occur, unfortunately, with severe consequences and high frequency because of the large import of crude to the U.S.

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.

MARCH 3, 1849

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